The
SHIPPING WORLD
AND SHIPBUILDING & MARINE ENGINEERING NEWS

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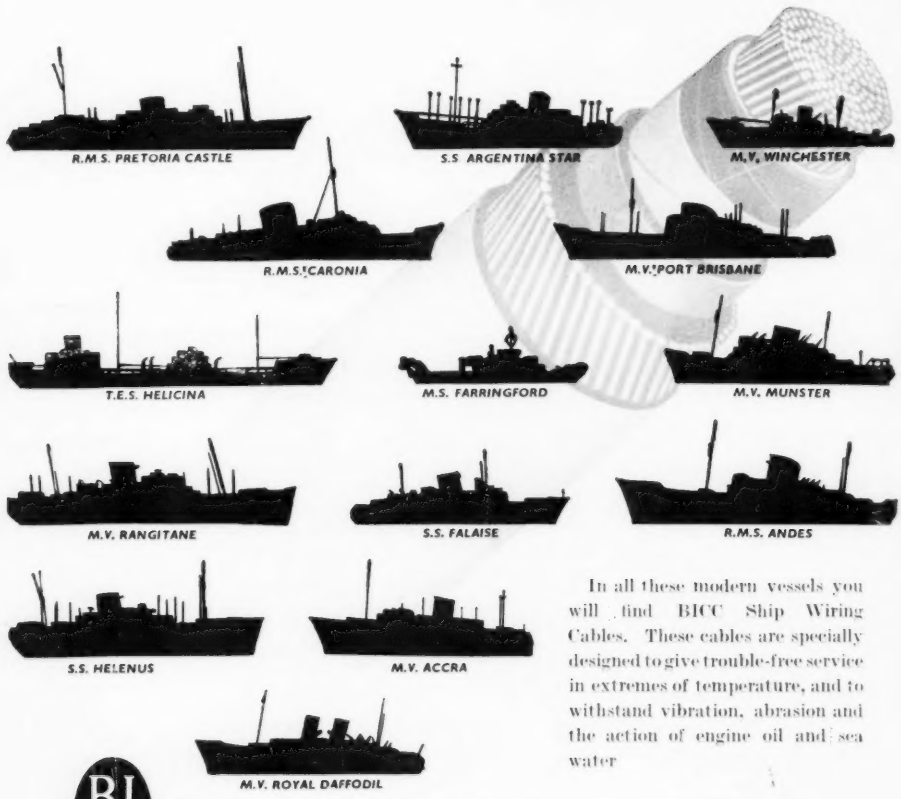

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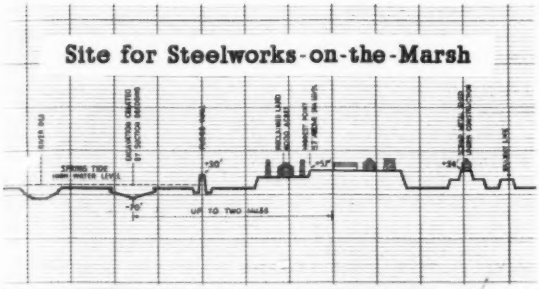

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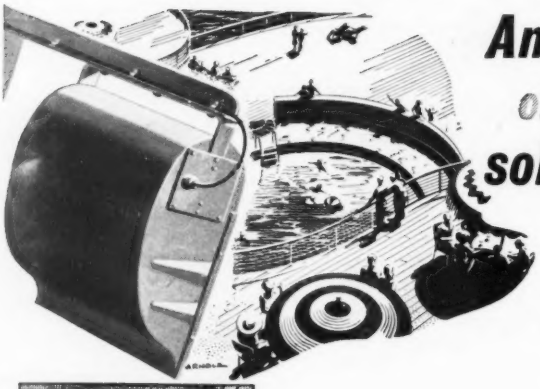

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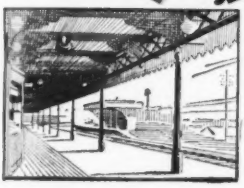

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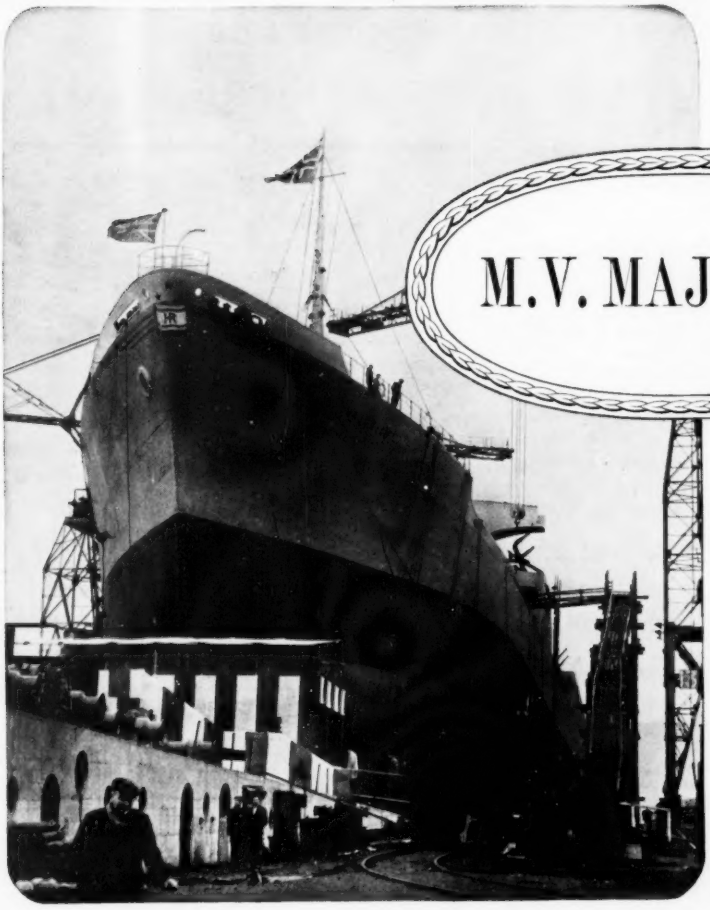

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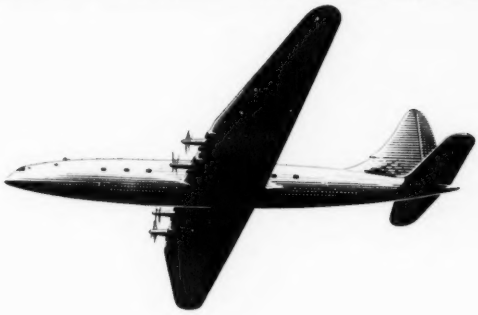
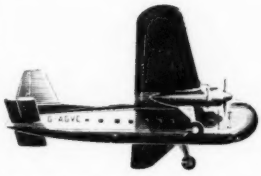


Bristol sleeve-valve engines in service



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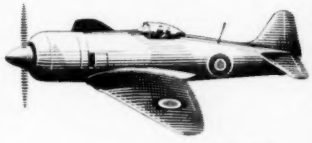

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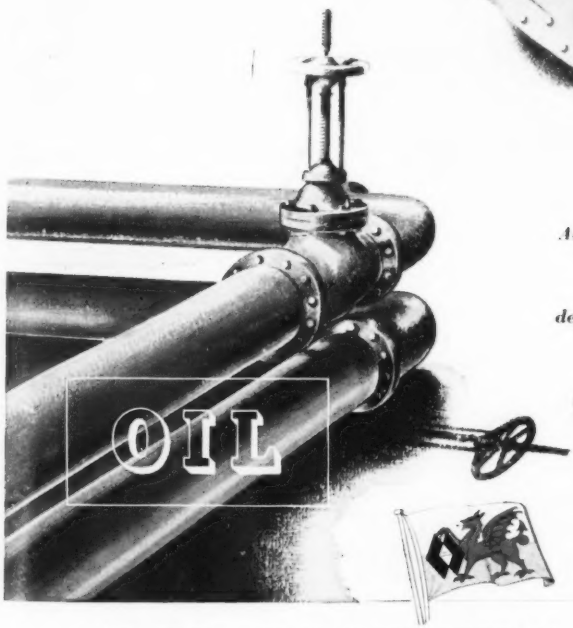

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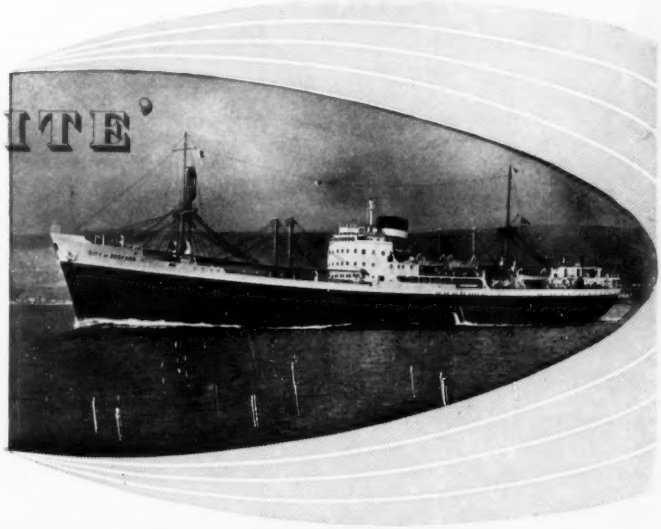

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Mr. H. T. N. Gaitskell, Chancellor of the Exchequer, introducing his 1951 Budget

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	1914	1951	Value today compared with 1914
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CIVIL AVIATION—GROUNDS FOR HOPE

THE offer of British shipowners some years ago to provide the country with efficient air services is a familiar story. They were prepared, as in the case of their sea services, to take all the risks involved without placing any burden on the taxpayers in the form of subsidies, except in the case of lines which were required for strategic reasons and might not, at any rate at first, show a profit. It was a characteristic gesture by those who are accustomed to adventure; otherwise they would never have become shipowners, facing competition without flinching, even though it is often unfair owing to the enjoyment by rivals of subsidies and other forms of flag discrimination. They pointed out that they had offices all over the world, the staffs, and the necessary experience in dealing with passengers and freight. The set-up would have been much the same as on the sea. The Government provides the Royal Navy, necessarily a State affair, and the shipowners the complementary merchant fleets; the Government would have been responsible for the Royal Air Force and the shipping industry for the civil air services. If that offer had been accepted, the country would have had, we do not doubt, better air services and would have saved many millions of pounds, which have since "gone down the drain". But, at that time, nationalisation was to solve every industrial problem, the workers putting their backs into their jobs and labouring for the community as they had never done under the conditions of private industry. The shipowners' offer was spurned; they were greedy profiteers, hated by the doctrinaires among the Socialists who had graduated at the London School of Economics. Ignoring the successful cooperation in peace and war of the Royal Navy and the shipping industry, State Corporations were set up. The results are well known.

Is it too late to modify this policy of folly? Before the date of the General Election had been fixed, it looked as though the sponsors of the corporations were beginning to repent. Events suggested that the policy of the future would be more realistic. It seemed that it had been decided that, while reserving scheduled services to the corporations and their associates, there would be a place for the independent private company in air transport development. The implication was that though the charter business was expanding, companies would expect, if they were to succeed, some steady source of bread and butter. There was ground for believing that the Government was trying to work out a scheme of cooperation by enlarging the scope of Government contracts, mainly in the military field, and thereby permitting the charter companies to participate on an assured and remunerative basis in the large-scale movement of troops by air. It is beyond question that in the event of war, the aircraft operators would have an important rôle to play. Private enterprise, exposed to the free play of competition, national and international, and swiftly adaptable to changing conditions, can always beat State monopoly, hampered by red tape, in a fair and square fight, as experience has fully proved. Monopolies are always costly, and inevitably inefficient, as the recent history of the coal mining industry and the railways has shown.

If the Socialists are defeated at the polls, will the State corporations be wound up? There is, at any rate, everything to be gained by the country if private operators are encouraged to show enterprise. The ideal conditions are, of course, those of the Royal Navy and the shipping industry, but, failing any such complete change of policy in civil aviation, there is plenty of room for private enterprise. The future of civil aviation is not, it is obvious, to be an issue at the General Election. There are at once, more urgent, if not more important as well as much more trivial, matters to be submitted to the electors. It is on their verdict on these party subjects of violent controversy that the results throughout the country will depend. Once they are known, the charter companies, as well as the aircraft industry generally, will be able to look round and weigh up the possibilities of the future.

Current Events

The Persian Oil Trouble

IS IT merely a coincidence that the Persians' final defiance of the order of the International Court of Justice at the Hague coincided with the preparations in this country for the General Election and with the increasing absorption of the Americans in the campaign for the Presidential Election? Whether it be a coincidence or not, the expulsion of the remaining officials of the Anglo-Iranian Oil Company from Abadan occurred at a time when other issues were to the fore in the United Kingdom and in the United States. What the ultimate issue will be it would be rash to prophesy, but one thing is not beyond dispute. After all the talk of collective security, its machinery does not work to prevent solemnly concluded treaties being violated. The countries behind the Iron Curtain put the brake on decisive action by the so-called United Nations whenever they consider that their interests in the cold war in East and West are threatened and other countries, which have had no part in setting up the cooperative organisations, like Persia and Egypt, do not believe they need fear reprisals for any action, however outrageous, which they may take. Collective security has broken down in Persia as it has already done in Europe as well as elsewhere. So the Persians, dominated by the rich and hot-headed clique

of nationally minded landowners, needed little courage to proceed from talking to action which has, for the time being at least, brought to a standstill the oil industry in their country, leaving thousands of Persian workers to their unhappy fate in idleness without pay. The whole story of the attitude of the British Government to the Persians has from the beginning of the trouble been a sorry one. The Shah's advisers seem to have studied the record of the present Foreign Secretary, very different from that of his predecessor in that office, and to have come to the conclusion that he and his colleagues were doing no more than bluffing when they made preparations for action by British armed forces, naval, military and aerial.

The A.I.O.C.'s Position

Internationally the action of the Persians is a serious matter, since the large volume of oil which has hitherto been carried all over the world from her fields will be sorely missed and arrangements must be made to obtain supplies from other sources. The company has been the victim of the vacillating policy of the British Government, which, having declared that it would never withdraw the British staff from Abadan, has permitted the Persians to expel them, bag and baggage, leaving British property which is worth more than £500,000,000—more than half belonging to the British Government itself, that is the taxpayer—to be confiscated without a suggestion of adequate compensation for the refinery itself, the houses of the staff and workers, the hospital which has proved such a blessing to the natives, and all the other buildings which had, in combination, made Abadan almost a paradise to the ordinary poverty stricken inhabitants of Persia. The people of this unhappy country, where British enterprise and capital were steadily raising the standard of living, will suffer, and suffer grievously, even if they escape falling under the domination of the Communists who have been responsible for the anti-British agitation with all its misrepresentation and, to put it bluntly, lies. As to the Anglo-Iranian Oil Company, *The Times*, in a well informed review of its prospects, has remarked that, with its wider range of operations, it can almost certainly do without Persia, serious though the loss may be, more easily than Persia can do without the company.

The Refinery Problem

It is, of course, fortunately the fact that the all-important Anglo-Iranian marketing organisation, the tanker fleets, and, above all, the organised experience and teamwork of the staff remain. The sources of oil are depleted for the time being, but they are substantial and are increasing. Kuwait is producing at the rate of about 40 million tons a year, and of that the Anglo-Iranian Company gets a half share, or 20 million tons, and it looks as though the company will, in no short time, be doing very well. Together with the oil from its other Middle East participations, it is getting supplies of about 25 million tons a year from its own sources, compared with a maximum rate of about 16 million tons just before the shut-down. The important point to be borne in mind by all concerned, and excluding shipowners, is that production from Kuwait is rising steadily. The problem of the immediate future is likely to be the refinery capacity. The company has now to face the difficult question—so far to dismiss Abadan from its calculations and concentrate on building additional refinery capacity elsewhere—at Aden and at some Australian port, for example—in order to ensure adequate future supplies of products. A new refinery which may cost as much as £30,000,000 is already planned in the Commonwealth and in that property the company would have a half share. But though the management may surmount its present troubles, it would be absurd to ignore the fact that those troubles have been due, not to any failure on its part, but to the weakness displayed by British Ministers from the first.

Oil Pollution

Ever since oil began to replace coal, shipowners, and particularly tanker owners, have been condemned for polluting the seas round the coasts, injuring the fisheries and bringing birds to their death. The matter has again been to the fore and Mr. W. G. Weston, chairman of the Oil Tanker Section of the Chamber of Shipping, has done good service by explaining the position in a letter to *The Times*. In writing he had to bear in mind that the subject is now being inquired into by the Ministry of Transport. But though this, of course, "cramped his style," as the saying goes, he dealt effectively with a number of misconceptions, and especially with the widespread belief that the shipping industry has been indifferent to the evil. As Mr. Weston pointed out, precisely because the risk of oil pollution from tankers is so large and so obvious, the measures taken to avoid discharge of oil or oily waste by these ships are the more stringent. He declined to prejudice the issue of the inquiry in progress, but he did well to recall that a large number of ships were sunk during the war years round our coasts, including fully laden tankers and ships with oil bunkers on board. Oil escaping from these ships is perhaps a major factor in the present problem. But the main point to be emphasised is that a great deal of time and thought by tanker owners, individually and cooperatively through the tanker section of the Chamber of Shipping, have been given to measures to eliminate the risk of oil pollution of coastal waters by their discharges. One of the main lines of action adopted has been the provision of sludge reception plants and separator facilities ashore. In addition, tanker masters have been given the strictest instructions from their owners against the discharge of oil or oily waste near coasts. The discharge of oil or oily waste into the sea within 50 miles of any coast is specially forbidden. As Mr. Weston explained, compliance with the instructions, in fact, often involves the costly deviation of ships, which masters are authorised to incur. Furthermore, outward bound vessels wait to discharge oily waste until at least 100 miles clear of any land. The chairman of the Oil Tanker Section has thus made it clear that tanker owners recognise and deplore the nuisance and are doing and will continue to do all in their power towards its elimination.

The Limit of Costs ?

After the launch by Mrs. Warwick of the cargo motorship *Oswestry Grange* from the Hebburn shipyard of R. & W. Hawthorn, Leslie & Co., Ltd., for Houlder Bros. & Co., Ltd., Mr. W. C. Warwick mentioned that the new ship was costing about £700,000. The first ship of her name, built in 1902, was a vessel of 6,674 tons gross with a large amount of insulated space, and she had cost £150,000. The new *Oswestry Grange*, of about 8,300 tons gross, has no provision for the carriage of refrigerated cargoes, but if this provision had been made, Mr. Warwick estimated, she would have cost no less than six times the amount payable fifty years ago; and it is not without significance that the general level of wages today is about six times what it was in 1902. Mr. Warwick said that his remarks were not intended to be any reflection on the builders, but he very much hoped that by now we had "reached the limit of costs." As he pointed out, if costs continued to rise in the alarming manner experienced in the last year or two, it must become increasingly difficult for shipowners to face up to the serious problem of the orderly replacement of their older ships. It is a staggering enough proposition that in a comparatively short earning life, a vessel should have to earn more than three times its own cost to build before it can be replaced, even without the incidence of taxation. With taxation on profits at its present high level, shipowners cannot amass the reserves which are

necessary to replace the ship at currently enhanced values, which do, in effect, represent the depreciation of the value of money, a trend which has been going on steadily for a great number of years, but whose pace is now showing dangerous signs of acceleration.

The Unknown Future

AT THE annual meeting of Furness, Withy & Co., Ltd., Sir Ernest Murrant added a few remarks to his printed statement which was circulated with the accounts. Since then the date of the General Election has been announced, the result of which will have an important effect on all industry. For example, dividend limitation may be abandoned, and the shipping industry may even receive more sympathetic consideration in regard to methods of assessment for taxation in relation to replacement problems. On the subject of replacement costs, Sir Ernest referred to the figure of £5,106,177, which represented the company's liability on uncompleted shipbuilding contracts. That was the best estimate which could be made on the date of the accounts, but now it is already known that the figure will be considerably exceeded before the ships are delivered. There will be an additional liability arising through the increase in the price of steel, which affects ships' hulls and engines and a large amount of sub-contracted work. Since the last of the ships under construction will not be completed until 1955, it is easy to see how impossible it is to give precise figures for ultimate cost, and it is equally impossible to say what the state of the world freight markets will be at that time. What he thought was abundantly clear was that, whatever the volume of overseas trade may then be, by that time there will undoubtedly be a "very considerable and menacing development of German and Japanese shipping" to add to the problems which already face the British shipping industry.

Tanker Rate Award

TO ASSIST inter-company tanker charterers to calculate reasonable and equitable rates of freight for time charter over long periods, when it is not desired to follow the extreme fluctuations of the chartering market, a panel of London tanker brokers meets twice yearly to make an award for such chartering for the next period of six months ahead. At the latest meeting, the panel awarded a rate of 47s. 6d. per ton deadweight per month as the time charter rate applicable on October 1 for a diesel tanker of 12,000 tons d.w., having a speed of 11 knots on a consumption of 13 tons of oil, for a period of two years. The first award made by this panel was for the period beginning on April 1, 1949, when the rate fixed was 18s. 6d. This rate remained steady, except for a fall of 3d. in April, 1950, until October of that year, when it was increased to 30s. Last April the rate was again increased, to 39s., and now the panel has been compelled to follow the upward trend by awarding a rate of 47s. 6d. A wide range of factors must influence the judgment of the panel in assessing a rate of this nature, but it can be deduced, from the character of the award, that operating costs are likely to affect the level of the charter rate more strongly than the prospects of supply and demand in the open charter market. The continual rise in this charter rate award since October 1950, can, therefore, be assumed to be a good index of the increases in the cost of operating tankers which have occurred since that date. Similar factors equally affect the operation of dry-cargo liners, which are also more adversely affected by delays in turnround at the ports, so that rising costs can be seen to be the major factor in the many recent increases in liner conference freight rates.

Improved Trading Account

THOUGH conditions were adverse during the earlier months of the 1950-51 trading year of the Reardon Smith Line it closed on March 31 last—the group succeeded in advancing its profit on working account from £766,000 to £1,219,000. The year's net profit was £651,000 after taxation of £599,000, and amply covers the maintained and "standard" dividend of 12½ per cent. This costs no more than £105,000 compared with £120,000 transferred to general reserve, £83,000 allocated to tax equalisation (representing the benefit derived from the initial allowances) and £335,000 placed in the depreciation reserve. In addition to their repeated dividend, stockholders also again receive 10 per cent (not subject to tax) from realised capital accretions. The consolidated balance sheet is a sound and solid structure. Excluding the future tax provision of £395,000, reserves totalled £4,410,000 at the date of the closing of the books, or more than three times the issued one-class capital of £1,532,000. The main item in the reserves aggregate is the sum of £2,058,000 held in the fleet replacement account. That sum, in turn, comfortably contrasts with the modest net value of £2,693,000 (some £13 only per deadweight ton) assigned to the fleet. The average age of the fleet, whose deadweight tonnage was 202,000 at March 31, was then only 9½ years, an age composition since bettered by the sale of the two oldest vessels. Two new diesel vessels have been ordered for delivery in 1954 and will cost £1,050,000. Ample liquid funds are held for the financing of this contract; the group had £930,000 in cash at March 31 and £2,792,000 in Government securities with a market value then of £2,857,000. Working and repair costs are still high but freight rates, though below the year's best, are currently providing a reasonable profit. Indeed, the Reardon Smith directors forecast good results from the present year's trading.

75 Years of Progress

LAST YEAR marked the seventy-fifth anniversary of the foundation of Johnson & Phillips, Ltd., a firm perhaps best known for their electric cables, although also active in many other departments of the electrical field. The present year is thus the first in the last quarter of their century, and an attractive pamphlet has been produced to mark the event. Coming late into the field, electricity is a subject in which most spectacular advances have been made in the last 75 years, and this is well emphasised in the pamphlet by the juxtaposition on facing pages of examples of the company's work in early and in recent years. The contrast is such that it is hard to realise that all this has taken place within the span of man's lifetime. It is electric cables that have changed least over this period—in the last fifty years there has been surprisingly little change—but the recent development by Johnson & Phillips of aluminium-sheathed cable allows them to point the comparison here, too. The principles of reliability and of good safety margins, which have always been a feature of the products of the engineering industry of Great Britain, have been inherited by the electrical industry, and have many times stood it in good stead. A Johnson & Phillips transformer unit in a Midland town was run for many months after air raids on the town at an average overload of 50 per cent, cooled by a water spray system reminiscent of Heath Robinson. Another occasion in which the firm takes pride was when a chief engineer reported after severe floods that a transformer had continued to operate even when completely submerged. In this case, naturally, no special cooling arrangements were necessary!

"PORTS OF THE WORLD"

The increasing demand for the current issue of PORTS OF THE WORLD has almost exhausted a second printing of the 5th (1951) edition. Only a small number of copies now remains in stock. As no further supply of this book will become available until the 6th edition, to be published in March next, orders should be placed now.

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ON THE "BALTIC"

TRANS-ATLANTIC COAL AND GRAIN CHARTERING

By BALTRADER

COAL CHARTERS from the United States to Europe have lately been less numerous than in preceding months, partly no doubt owing to the congestion at Hampton Roads, where the immense export of coal is placing a strain even on the outstanding facilities of that port. At the same time, there is no likelihood of any lack of orders in the coming months for U.S. coal in the markets of the near Continent, Mediterranean, South America and Japan. The rate of freight of $10.50 for Antwerp or Rotterdam and $10.95 for Germany has been successfully established as a result of the insistence of the American authorities. This has represented a decline of as much as $2.50 from the best rates previously secured in some cases. A measure of competition has, however, been introduced by charterers who have in some cases agreed to conditions equal to an extra 75 cents of freight in comparison with the usual Americanised Welsh terms. The Warshipvoy charter now frequently used in this trade is very much an owners' charter. In some cases, dispatch money for time saved has been dispensed with by charterers and in other instances 1 per cent commission instead of 3½ per cent has been agreed.

North Atlantic Grain Trade

In the grain section of North Atlantic chartering there was a small weakening some days ago when $12.25 was accepted for wheat from the St. Lawrence to Antwerp or Rotterdam, but there is no sign at all of a decline in freights paid in sterling. Many owners of Greek and other nationalities who are engaged in the trans-Atlantic trade have capital and operating commitments in dollars and show much preference for dollar freights. It may be also that internationally rooted managements regard a dollar, not without reason, as worth more than its face value at the present rate of exchange. However that may be, British owners who charter their vessels from North America, have no dollar requirements apart from the disbursements at the loading port and are quite content with freight in sterling. As they do not compete to obtain dollars they are better able to maintain the rates of freight in sterling, which remain very steady. The rate of 25s. per quarter is current for wheat from the St. Lawrence to the United Kingdom. It is 2s. 6d. more than the rate paid at the peak of the market earlier in the year and compares with 18s. 9d. accepted in the middle of the summer, when chartering from the St. Lawrence was at a low ebb. In the summer of last year the rate for that business was about 8s. per quarter.

Mediterranean Market Improves

After a dull period of some duration, the Mediterranean market has lately become the firmest of any. The shortage of tonnage in that area became apparent even before the large purchase of Russian grain by Great Britain. The Baltic and White Sea timber programme, as well as the North Atlantic trades, had drawn ships away from a market where little attraction was offered. Several remarkable time charters were a warning that charterers who wanted tonnage to load in the Mediterranean would have to increase their inducements. With the entry of the Ministry of Food into strong competition for tonnage to load in the Black Sea, further strength was added to the Mediterranean market. The rate from the Black Sea to the United Kingdom advanced from 92s. 6d. to 100s. Ore freights from North Africa rose by about 7s. and charterers for pyrites from Cyprus to the Continent have paid about 25s. more than was recently accepted by owners. Morphou Bay to Dunkirk has been chartered at 80s. per ton.

Little progress has been made in chartering to cover the British purchase of Indian coal. Several weeks ago, a vessel was taken at 110s. from Calcutta to the United Kingdom. This rate was not considered to be attractive, partly on account of the difficulty of loading at the right time in order to complete and sail at a time when the Hoogly allows passage with a full cargo. Since the fixture to the U.K. at 110s. was arranged, the same rate has been fixed from Calcutta to Alexandria. This indicates a decided upward turn of the market, because discharge in the Eastern Mediterranean leaves a vessel well placed for a further profitable homeward voyage. Calcutta coal freights in several directions are firmer than they have been for some time and cargoes to this country may have to rise proportionately. Smallish cargoes of coal have been chartered to be loaded at Lourenco Marques this month for West Africa, where shortage of coal is acute. Owners are hoping that these fixtures are harbingers of a renewal of employment with coal from South Africa. The collapse of that market several months ago through internal traffic difficulties caused much disturbance in the operation of tramp ships East of Suez.

The Freight Market

The activity of the North American market for grain cargoes towards the end of last week was quite remarkable. The strength of freights in sterling was demonstrated by a large number of fixtures. While the Ministry of Food was doggedly trying to cover its requirements at 22s. 6d. per quarter from St. Lawrence to the United Kingdom, Germany stepped in and chartered about a dozen vessels from St. Lawrence to Antwerp-Hamburg range at the high rate of 107s. 6d. per ton for heavy grain with 3,000 tons daily discharge, free of stevedoring, for October and November loading. The Ministry was obliged to follow and fixed *Derrycunihy*, 38,000 quarters, St. Lawrence to the United Kingdom, at 25s. (equal to about 116s. 8d. per ton), October/November, with option Antwerp or Rotterdam at 7½d. less, and also *Huntsmore*, *Athens* and *Mary K* at the same rate for November loading. On the other hand, the *John Howland* accepted $12 per ton, St. Lawrence to Antwerp or Rotterdam, basis heavy grain, November. In sterling this last rate is equivalent to about 85s. 9d. Coal fixtures from North America have been less prominent but *Vergelegen* and *Concordia* are fixed from Hampton Roads to Antwerp or Rotterdam at 82s., option Germany 85s., on American Welsh terms with 1¼ per cent commission, November. This is the sterling equivalent to more than the now familiar $10.50 at which so many ships have been chartered in recent weeks. The North Pacific demand for grain and lumber ships is also strong and continues to draw tonnage from the idle markets of the Southern Hemisphere. The *Graigwyd* and *Marshall* are fixed at the improved rate of 172s. 6d., f.i.o., North Pacific to United Kingdom, December 5/January 5. The first ship goes in ballast from Australia and the other from the Argentine. Time chartering is not very active but there is a fair amount of inquiry and rates of hire are expected to remain very steady.

Air Charter Business

Demand for chartered planes continues to flourish and brokers are not able to find all the aircraft required. Government requirements are likely to occupy much of the available supply for service between this country and the Far East, as well as Germany. The Persian oil fiasco still bars unscheduled planes from going beyond the Persian Gulf, owing to lack of fuel.

Monthly Air Transport Section

AIRCRAFT AT FARNBOROUGH

THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS ANNUAL DISPLAY

By E. N. B. BENTLEY

THE twelfth annual flying display and exhibition of the S.B.A.C., held at Farnborough aerodrome from September 11 to 14, confirmed last year's impression that, as far as new designs are concerned, all the emphasis is on military aircraft. Even among established civil types there was at least one turncoat, in the form of a Percival Prince, which appeared in the red, white and blue roundels of the Royal Navy, under the name of Sea Prince. However, some civil aircraft which were new a few years ago are now about to go into service and were exhibited in their Corporation colours.

Among the smaller transports flown was the twin-engined de Havilland 8/11-seater Dove, with 340 h.p. de Havilland Gipsy Queen engines. Since it first flew in 1945, something like 300 have been sold and are in worldwide use. The latest version has obtained American validation of its certificate of airworthiness. The 5-8-seater Short Sealand amphibian, also fitted with 340 h.p. Gipsy Queen engines, showed an improved performance, particularly when flying with one engine stopped. This has been achieved by re-design and reduction in weight of the hull structure—a welcome change from the usual method of increasing the engine power. In addition to the Leonides engined Sea Prince in the flying display, Percivals showed a civil Prince with an extra 100-gallons fuel tank in the fuselage. Several such Princes have been delivered across the Atlantic by way of Iceland and Greenland, the tank then being removed and replaced by the normal 8 or 10 passenger seats.

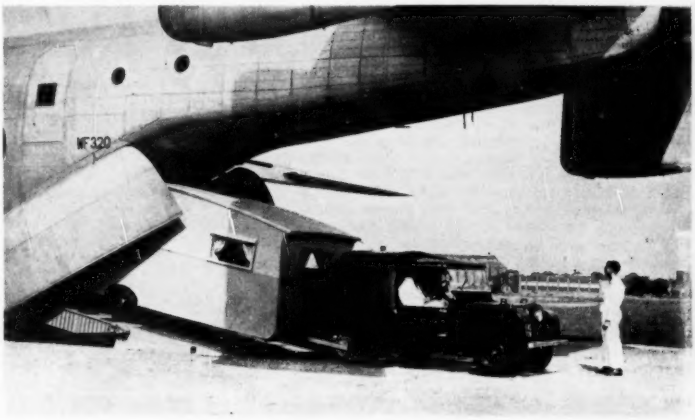
"A Flying Test Bed"

The twin-engined Mamba-Marathon is a development of the four-engined Marathon and is the first turbo-prop aeroplane in the world to use reversible-pitch propellers (de Havilland) for braking. Fitted with two 1,300 h.p. Armstrong Siddeley Mamba turbo-prop engines, it is a flying test bed rather than a transport aircraft. The standard Marathon, with four 340 h.p. Gipsy Queen engines, was exhibited by Handley Page (Reading), Ltd., successors to Miles Aircraft, Ltd., designers of the Marathon. This 22-seat version is the type which will go into service on the British European Airways Corporation internal routes next year. The smallest of the British four-engined transports is the 14/17-seater de Havilland Heron, fitted with un-supercharged Gipsy Queen engines of 250 h.p. each. The outer wings and tail unit are the same as those of the Dove. Designed for simplicity and ease of maintenance, it has a fixed undercarriage and has already seen service on the B.E.A.C. Channel Islands routes.

A familiar representative of the larger transports was the Bristol Freighter, with two 2,000 h.p. Bristol Hercules engines. This had the fuselage of a Bristol helicopter in the hold. In addition to service in many parts of the world, the Freighter is well known in England for the Lympne-Le Touquet car ferry operations of Silver City Airways. The 290,000-lb. Bristol Brabazon I was open to the public for the first time and an enormous amount of test equipment and automatic flight recording apparatus was seen to be installed in the numerous cabins. However, one cabin was equipped for passenger use and, with three seats each side of the gangway and plenty of headroom, gave an impression of spaciousness never achieved by any other aeroplane. This one cabin, representing perhaps one-fifth of the total cabin accommodation, had seating for over 30 people. The Blackburn & General Aircraft 100,000-lb. Universal Freighter, with four 2,940 h.p. Bristol Centaurus engines, demonstrated its usefulness by bringing a 22-ft. caravan and a Land Rover car to Farnborough, as shown in the illustration. The substitution of four moderate sized wheels for one huge one, on each main undercarriage, is an improvement which must relieve the minds of the tyre and brake manufacturers. The Handley Page Hermes V is similar to the Hermes IV now in service with British Overseas Airways Corporation, but it has four 2,810 h.p. Bristol Theseus turbo-prop engines instead of the 2,100 h.p. Hercules piston engines. In spite of its 300-knots cruising speed, this 90,000-lb. aeroplane is remarkably quiet.

The Airspeed Ambassador

Of the aeroplanes shown in Corporation colours the first to go into regular service will be the Airspeed Ambassador, on the B.E.A.C. London-Paris route. Designed for short-stage journeys at moderate altitudes, these "Elizabethan" class aeroplanes, with two 2,600 h.p. Bristol Centaurus piston engines, cruise at 190 knots. The 47-seater cabin is very roomy and, with a window opposite each row of seats and a high wing layout, there is a good view for all passengers. Seats are arranged three on one side of the gangway



Caravan by air

The largest cargo ever carried in a British aircraft was recently transported to and from the Air Display at Farnborough, in a "Universal" Freighter. The cargo consisted of a 22-ft. caravan, used at the display by the Blackburn & General Aircraft, Ltd., for entertaining overseas visitors and guests, and its towing unit, a Land Rover. Constructed by Blackburn & General Aircraft for the carriage of heavy and bulky air cargoes, the "Universal" Freighter aircraft has a wing span of 162 ft., a weight of 45 tons and a payload of 15 tons. There is a cargo compartment measuring 36 ft. long by 10 ft. in height and width. Claimed to be the largest machine of its type in the United Kingdom, the aircraft has an operating cost of 10d. per ton mile

and two on the other and the four rows of seats in the forward part of the cabin face aft. This arrangement, presumably dictated by convenience and comfort, is pleasing; but it seems a pity that it was not decided to go all the way and give every passenger the safety of rear facing seats.

The other aeroplane destined to go into service with B.E.A.C., on the longer stage routes, is the Vickers Viscount 700. With four Rolls-Royce Dart turbo-prop engines of 1,510 h.p. each, it cruises at 270 knots at 25,000 ft., which should allow a good many more revenue miles to be flown in the day. Seats are arranged two each side of the gangway, the forward cabin having accommodation for 16 and the aft cabin 24 passengers. This type of aeroplane, which gives turbine smoothness at comparatively moderate speeds and altitudes, may well be the transport of the future.

The beauty of line and the B.O.A.C. colours of silver and blue on the de Havilland Comet are well matched by the interior furnishings. The main cabin seats 28, in fully adjustable seats, two on each side of the gangway. The carpet and wainscot are dark blue, the walls and ceiling pale grey. The forward cabin has eight seats, four facing each other, across a table, on each side of the gangway. As exhibited, the tables in this cabin were laid with a typically excellent lunch, with wine, as provided for all passengers. The Comet, with four de Havilland Ghost turbo-jets, combines a high cruising speed of over 400 knots, with a still-air range of 3,000 nautical (3,540 statute) miles.

The new generation of civil aircraft is now moving from the shop window of Farnborough to the runways of Northolt and Heathrow. Let us hope that next year's display will show the world our long-range, trans-Atlantic, turbo-prop airliner, the Bristol Britannia.

INTERNATIONAL AIR TRANSPORT

INTRODUCTION OF TOURIST FARES ON WORLD ROUTES

Already preoccupied with the major questions raised by the forthcoming introduction of jet aircraft into scheduled transport service, the International Air Transport Association (IATA) spent much of its seventh annual general meeting in London in the discussion of the introduction of tourist fares on key world routes. The IATA general meeting does not deal directly with rates and fares, which are handled in the IATA traffic conferences, but it does bring the chief executives of the 62 member airlines together for high-level discussion of common views.

A dominant theme even before the meeting began, by the close of the sessions, Sir Miles Thomas, chairman of British Overseas Airways and 1951 President of IATA, was able to describe the following broad outlines of airline agreement on tourist services:

A "controlled experiment" in mass air transportation will begin sometime in 1952 with the institution of tourist service across the North Atlantic and from London to Johannesburg.

All North Atlantic and U.K.-South Africa operators are eligible to provide this service and those who elect to do so will keep detailed and accurate records of their experience.

These records will be made available to other IATA members for study as the basis for determining at what speed and in what way these tourist services will be applied to other world routes.

Eventually—perhaps some years off as yet—the scheduled airlines may then offer what the IATA Director General, Sir William P. Hildred, described in his annual report to the Westminster meeting as "a complete, worldwide two-level fare system."

Mass Travel Market

The decision to try tourist fares was made by the IATA traffic conferences at Bermuda last May, but disapproval of the resolution by the United States Civil Aeronautics Board, largely on technical grounds, put the exact status of the project in some doubt. The IATA general meeting therefore constituted in large part a reaffirmation of the airlines' intentions to take this important step toward reaching the mass travel market by offering service to fit the requirements of the millions, rather than the hundreds of thousands. Exact details of the service will be considered at special IATA meetings during the next month and will eventually come to a vote in the traffic conferences, after which they will be submitted to interested Governments for approval.

Viewpoints expressed by airline spokesmen at the close of the general meeting indicated, however, that tourist service could be sold to the public at a price about one-third below the $395 basic one-way North Atlantic rate from London to New York. It was emphasised that tourist service would provide the same essential levels of safety and convenience for the traveller as the first-class services and would often be flown in the same types of equipment. The economies necessary to achieve a lower fare would come from putting more seats into tourist aircraft; from flying the North Atlantic route with more stops, in order to reduce the amount of gasoline which must be carried on any one leg of the flight; and from feeding passengers on the ground at refuelling stops, in order further to reduce non-productive weight in aircraft. While this "controlled experiment" is going on, however, other means of reducing the cost of air travel to the passenger will still be tried. Tourist services as such are already part of the rate structure on some routes between North, South and Central American points. In Europe, short-haul airlines are offering special reductions for late night and early morning flights. And on the North Atlantic, the off-season reductions in first-class fares which have been offered during the past two years will be effective during the coming year as well.

Jet Transport Problems

Jet transport questions provided a link between the commercial and technical phases of the IATA general meeting. Those airlines now planning to introduce jet service when equipment can be delivered—from six months to two or three years—envisaged their new equipment as a vehicle for super-speed service. The large-scale use of jets, however, also depends on the speed with which airlines and Governments can effect improvements in communications, meteorology, navigation aids and air traffic control necessary to accommodate their high speed, high altitude and comparatively high fuel consumption. Much attention, therefore, was devoted to the reports of the IATA technical committee. A highlight of this report was the announcement that IATA technical groups had devised and put to the International Civil Aviation Organisation (ICAO) and the Governments concerned a proposed rearrangement of air traffic control and navigation aids designed to relieve the growing congestion of air traffic over Europe and the Mediterranean.

Mr. W. Gordon Wood has been appointed vice-president in charge of traffic, Trans-Canada Air Lines, in succession to Mr. Anson C. McKim, who resigned recently. Mr. Wood has been general traffic manager for the company since 1948.

The Italian airline Alitalia is resuming its regular passenger and cargo service between Rome, Paris and London. There will be two weekly flights from Rome and from London and Paris.

The British Commonwealth Pacific Airlines, jointly owned by the Governments of Britain, Australia and New Zealand, made an operating profit of nearly £26,500 for the year ended March 31. During the year the airline carried nearly 14,000 passengers, 28 per cent more than in the previous year.

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Monthly Air Transport Section

TURBINE TRANSPORT OPERATIONS IN EUROPE

THE METHOD OF "VARIABLE BOOKING PAYLOAD"

By "ALBATROSS"

THE introduction of the gas turbine engine has set the aircraft designer many problems, but the past ten years have seen many of these solved and have given some indication of those to come. British airline operators are already gaining experience on turbine engined transports in experimental flights. But the biggest and least clearly defined problems are those with which the air traffic controller will be faced when the turbine aircraft go into regular service. The average air traveller probably does not even know of the existence of the controller, though his life may often depend on him. When one considers that Northolt and London airports, only six miles apart, deal with 100 to 150 aircraft a day each, going and coming from north, south, east and west, in all conditions of weather, by day and by night, then the need for an air traffic control system is obvious.

From the aerodrome control point of view, the turbine aircraft has two essential differences from the conventional aeroplane. Its high speed and high altitude imply that it must be brought under control of the airport of destination at a much greater distance than is the practice today. Its high fuel consumption at low altitudes means that the present system of "stacking" aircraft on a circuit near the aerodrome while waiting their turn to land in bad weather cannot be used. It is not surprising, therefore, that one of the papers read at the Anglo-American aeronautical conference held recently at Brighton, dealt with the problems of turbine transport operations in Europe. This joint conference of the British Royal Aeronautical Society and the American Institute of Aeronautical Sciences is held every two years, alternately in England and the United States.

Pure Jet or Turbo-Prop?

Mr. K. G. Wilkinson began his paper by stating that the new operating practices which would have to be evolved for turbine engined transports would ultimately determine the answer to the question "pure jet or turbo-prop?" During 1950 the British European Airways Corporation put the prototype Vickers Viscount turbo-prop transport into service for three weeks, on the London-Paris and London-Edinburgh routes. This was thus the first airline in the world to introduce the new generation of turbine engined aircraft into service and, even in the short trial period of three weeks, a good deal was learned about the problems involved. Special arrangements were made with the Ministry of Civil Aviation to allow the Viscount to take advantage of its rapid rate of climb and descent when travelling within the control zone. This saved about 100 lb. of fuel on each flight and, if a similar procedure had been allowed at Paris, a weight of fuel equivalent to one passenger could have been saved.

The fact that an aeroplane must land when, or preferably before, its fuel is used up, has naturally resulted in a conservative allowance being made when deciding on the fuel reserves to be carried. The more exactly the fuel needs can be estimated, the less chance is there that excessive fuel, and therefore a reduced payload, will be carried. The present system of determining the booking payload, known as the "sector fuel" method, is based on fuel allowances for cruising in wind conditions that are estimated to occur on 70 per cent of the flights made, plus holding or "stacking" for one hour at the destination, plus diversion to the furthest alternative airport laid down for that sector of the route. B.E.A.C., in seeking some less wasteful procedure for determining payload, evolved what is called the "variable booking payload" method.

This is briefly a more accurate determination of the actual fuel required for each particular flight. Two estimates are made; the first is as far ahead of the actual date of flight as is possible, in order to give the maximum time for selling the seats; the second is shortly before the take-off. The first estimate is naturally liable to considerable error, particularly with a new aircraft or a new route. In such cases the only safe procedure is to make arbitrary allowances, well on the safe side. In Europe the route will generally be known, thus eliminating one of the difficulties. It should then be possible, from past operational records, to make a more realistic allowance for head winds, diversions and so on, according to the season of the year, the time of the flight and any other relevant factors. The second and final estimate is made by the captain of the aircraft, who knows the payload booked and who has the meteorological forecast on which the fuel to be carried will largely depend.

Cost per Capacity Ton Mile

The "variable booking payload" method involves more work and a careful analysis of past results, but it is well worth while. On the 500-miles London-Zurich route, for instance, it is calculated that the cost per capacity ton mile for the turbo-prop Viscount would be reduced by no less than 40 per cent, by using this method. For a pure jet aeroplane the estimated reduction in cost would be about 20 per cent. On the 1,100-miles London-Rome route the situation is reversed, the pure jet showing a much bigger percentage reduction than the prop-jet. This is a good example of the effect of stage length on operational characteristics and the need to design the aircraft to the route if the best results are to be achieved. The reductions in cost are impressive; but they must be considered in the light of the probability that turbine engined aircraft could not operate commercially at all under the present system.

In the discussion following the paper, Mr. Peter Masefield, chief executive of B.E.A.C., said that variable booking payload was a fundamental necessity to turbine aircraft. A modified form was being tried out on the Viking aircraft on the London-Rome service and it had been found possible to offer 1.7 seats extra and to sell 1.1 extra seats. Assuming that the 27-seater Viking was referred to, this would amount to 6 per cent more seats offered and 4 per cent more actually sold. Mr. Masefield stated that B.E.A. believed that the prop-jet was the answer and would cover their requirements for at least the next ten years.

New Aircraft for London-Paris Run

British European Airways' "Elizabethan" flagship—the Bristol Centaurus-powered Airspeed Ambassador—carried a full complement of passengers on its final proving flight from London to Paris on September 1. Take-off weight, with 48 passengers as well as crew, was 51,500 lb., or 1,000 lb. under maximum. The aircraft made an on-track climb to 15,500 ft. and the time for the flight was 1 hr. 20 min. Scheduled services are to begin towards the end of October.

Flying Boat for New Zealand

A "Bristol" Hercules-powered Short Solent aircraft left Belfast recently on its delivery flight to New Zealand, where it is to go into service with Tasman Empire Airways, Ltd. The aircraft has been overhauled by Short Bros. & Harland, Ltd. The Solent, named *City of Belfast*, is flying to New Zealand via Castle Archdale, Gander, Norfolk (Virginia, U.S.A.), Corpus Christi (Texas), San Francisco, Honolulu, Canton Island, and Fiji. The 2,096 miles from Honolulu to Canton Island will be completed in one flight. The Short Solent is powered by four 2,040 h.p. Bristol Hercules 733 engines. Four of these aircraft are already operated by T.E.A.L. between Auckland and Sydney.

THE AIR FREIGHT MARKET

AIR FLEETS INADEQUATE TO SERVE DEMAND

After several weeks of comparative inactivity, interest in the chartering of aircraft has again revived. It is reported by E. A. Gibson & Co., Ltd., in this firm's excellent air charter bulletin, that although inquiry is again circulating on a large scale, it is still no easier to find aircraft to move either cargo or passengers. The general situation in the Middle East and the fact that petrol supplies have not been available in sufficient quantities east of the Persian Gulf, hinder any sort of work being done on what is now the most important air charter route in the world. Generally, only heavy aircraft are fit for this route, and it is the heavy aircraft which have been under charter or standing by for the Air Ministry. "All the same, a false shortage of lighter aircraft has been caused by the awarding of a trooping contract to a Viking operator at rather short notice, causing that operator to do a very fair amount of sub-chartering to enable it to undertake other commitments."

Aircraft Laid Up for Survey

A few aircraft have been available, but can only be put on the market for a short period because at this time of the year nearly all the Certificates of Airworthiness fall due. The fact that so many aircraft are having their surveys at the same time is inclined to slow down the process of granting new certificates, and operators frequently find that their aircraft are compulsorily out of service for a month or more.

From the business done, and the inquiry circulating on the market, particularly this year, the fact has emerged that there is a tremendous and ever-increasing interest in the use of air transport both for cargoes and passengers, not only militarily, but commercially; and by the experience of this summer it has been proved that the whole combined fleets of every country in the world were quite inadequate to serve the demand. The charter business particularly has been able to demonstrate over a period of the last five years that it is generally economical to ship cargoes by air. Apparently the demand will go on increasing at a rate very much in excess of aircraft production.

The most serious time for the charter companies is yet to come. Many of them are now working with aircraft which were bought comparatively cheaply after the war, and which will soon be obsolete. Replacements will be difficult to get, and at present-day prices the capital expenditure will be enormous. The whole structure of the charter business is likely to change within the next year or two.

The International Aircraft Brokers' Association, now in the process of formation, is receiving growing support, and strong and encouraging support has now been received from the active London brokers. A general meeting will be held in Paris in November, when it is hoped that the formation of the Association will take shape, and the various countries participating can immediately start to further the objects. The Aviation Congress to be arranged by the Paris Air-freight Exchange, has been postponed until the latter half of January, owing to the amount of study which is required before the various committees can submit their recommendations. However, IABA will still have the closest cooperation of the Paris Bourse and its affiliated organisations at its next meeting, and it is possible that the conclusions and decisions reached as a result of the IABA meeting, will form part of the Congress to take place in January.

The congress which the Paris Bourse is arranging is different in character from the IABA. Its congress aims at having suggestions for the general improvement and better propaganda of air transport supplied by brokers, operators and all others connected with the aviation industry, so that the recommendations can be put forward to the right bodies.

The president of the International Air Transport Association at the London conference reported that 1950 was "a wonderful year," while many airlines are indicating "spectacular results" for the first half of 1951. The statistics show that 30,000,000 passengers were carried by the members of IATA in 1950, which represents a 15 per cent increase over the number the year before. They travelled a total of 26,000,000,000 passenger-kilometres. Cargo ton-kilometres performed during 1950 were 33 per cent higher than in 1949. The number of aircraft in the IATA members' fleets is round about 2,500, but higher speeds and larger payloads give about 40 per cent more passenger and cargo capacity than they did four years ago. The safety record over 1950 showed further improvement.

The costs of aviation fuel have gone up between 30 and 40 per cent since 1947, and landing fees have been increased at what the president called "an alarming rate." In spite of these rising costs, the president of IATA attributed the progress made by the airlines to increased efficiency and to the very high airline revenues. Gross revenues in 1950 for all IATA members was said to be about $1,500,000,000. Individual profits are from time to time published by various airlines, but the figures generally tend to be a little confusing. It is now well known that BOAC and BEA are making a profit when their figures are taken over a short term period, but of course, they have very high deficits from the first few years of operation.

Recent Fixtures and Inquiries

Among recent fixtures, a DC-4 aircraft has been chartered to perform a contract for the carriage of 450 passengers from Oslo to Sydney. The conclusion of this contract is the result of negotiations which have been taking place for several months, and which have been hindered by the aircraft and petrol shortage. Very attractive offers have been put in for the carriage of these passengers direct to Sydney, but as the petrol situation still prevails, they will now travel on the westbound route via the United States. Each whole trip will be performed by three distinct operators over the route via New York and San Francisco.

In their air freight market report, Lambert Bros., Ltd., note that there have been a large number of inquiries for the movement of ships' crews throughout the next few months and it is a noticeable feature that the switching of a ship's crew by air is becoming an everyday occurrence. Most of the summer passenger flights have now been completed, but aircraft operators appear to find the prospects of this coming winter much brighter than those of last year. During the last few months it has been becoming increasingly difficult for agents to book space for both passengers and freight on the regular airlines and at the moment the majority of scheduled carriers are virtually fully booked for the next few weeks, and the back log of freight in particular extends to four or even five weeks on certain of the world's routes.

New Sabena Freight Office

A new freight reception centre has been opened by Sabena Belgian Airlines at Terminal House, Grosvenor Gardens, London, S.W.1, near Victoria Station. Besides the handling of freight, the new offices will also house the booking, information, accounting and publicity services. A reception was held in the new offices recently, at which guests were welcomed by Mr. A. Van Oppens and M. L. Schoevaerts, the commercial director from the head office in Brussels. The air services offered by Sabena are being extended this month by the introduction of a new weekly service, flown with twin-engined DC3s, between Costermansville, Belgian Congo, and Dar-es-Salaam, via Albertville and Tabora.

Shipping and Ceylon

Proposals for Port of Colombo

By a Correspondent

THE formation of an autonomous port authority for Colombo Harbour, composed of a body representative of shipping, Governmental and other interests, and the construction of a modern multi-storied warehouse on a section of the Chalmers Granaries for the storage of rice and general cargo, are among the main recommendations of the Port Investigation Committee, the report of which has been officially released. The committee comprised Mr. Eric Millbourne, Adviser in Shipping to the British Ministry of Transport, and Mr. A. E. Christoffelsz, retired chairman, Colombo Port Commission.

The recommendations of the committee are as follows:—

1. Every effort should be made by Government departments and shipping companies to regulate the flow of vessels bringing full cargoes of all classes of goods into the port.

2. Arrangements for the clearance of food cargoes direct from lighter to road and rail transport to destinations outside the port area should be made well in advance of the arrival of ships. There should be maintained at all times the closest liaison between the various responsible persons in order that the fullest use may be made of all transport facilities.

3. The unloading of lighters should be maintained on a 24-hour basis.

4. The introduction of mobile handling equipment, to the extent it can be used, should be proceeded with at the earliest possible moment.

The above are matters which, if implemented, will have an immediate effect upon the working of the port. There are further recommendations which the committee consider even of greater importance, but which will take a longer time to bring to force. They are:—

1. The construction of a port warehouse on the site of the present Chalmers Granaries and facing direct on to the canal and having access to both road and rail connections.

2. The formation of an autonomous Port Authority. The Committee recommends that this body, once formed, should give its first attention to the following matters:

(a) The number of landing and wharfaging companies which operate within the port and the conditions under which they operate, with a view to obtaining the most efficient organisation for carrying out the important functions which is their duty.

(b) Consideration of the terms and conditions of the employment of dock labour within the port which offers scope for improvement, particularly in regard to the maintenance and best use of skilled gangs of workers and to the introduction, where possible, of piece work rates or incentive bonuses.

(c) The maintenance of a staff of qualified technical officers so that all departments are kept in a state of efficiency.

Government Shipping Service

Satisfactory progress has been made in the negotiations for the formation of a Ceylon merchant shipping line, and it is likely that the service may begin early next year. This statement was made by Mr. H. W. Amarasuriya, Minister of Commerce and Trade, who has returned to the island after contacting shipping lines both in the United Kingdom and on the Continent and discussing with them the feasibility of running a merchant shipping service. The Minister entered into negotiations with them with a view to forming a Corporation to man the services. It is intended that the Corporation should consist of the Government of Ceylon, an overseas shipping line and the public. The Minister expects shipping firms to communicate with him shortly, indicating the terms and conditions under which they are prepared to be members of the Corporation. The Minister is hopeful that an established shipping line will operate ships in much the same way as the partnership between Air Ceylon and Australian National Airways.

Manchester Dock Strike

Evidence of Prior Organisation

A REPORT* on certain aspects of the Manchester dock strike which lasted from April 25 to June 7 last has been presented to Parliament by the Minister of Labour and National Service. The report was prepared in an endeavour, without holding a public inquiry, to establish the facts bearing on the important aspects of the strike to which the Minister referred when he said in the House of Commons on the last day of the strike:

> It seems to me important to establish how it came about that men were induced against the advice of their Union to take strike action in breach of agreement for declared objects which were not only impossible of achievement but were detrimental to their own interests and to the interests of dock workers as a whole.

The first part of the report brings together the main facts and more significant developments from which conclusions may be drawn as to the reasons for the prolongation of the strike. Manchester is not a port with a history of disturbed industrial relations between management and men. The strike could not, therefore, be explained as one of a series arising from bad relationships. The report also makes it clear that the strike was not due to a spontaneous outburst of feeling on the part of the dockers when two of their mates were suspended for refusing to work overtime.

The report examines the indications that there was an organisation in existence before the strike, making preparations for unofficial action at a suitable opportunity. A Port Workers' Committee was formed in Manchester early in 1951, and this Committee had been meeting for several weeks before the strike. Before it began, a leaflet was distributed; and even when the strike ended in the complete rejection of the unofficial leaders, sufficient organisation and finance remained to publish a 15-page pamphlet in defence of their action.

Strike Tactics

The report also examines the tactics by which the unofficial leaders were able to keep the strike going for so long. It was prolonged far beyond the time when the original grounds of the dispute had ceased to be the real issue, and had been replaced by demands that could not be met without undermining Union authority, invalidating the joint agreement and repudiating the appeal machinery of the Dock Labour Scheme. In examining the facts from this angle, the report directs particular attention to such matters as

(1) the constant raising of fresh issues unconnected with the original cause of the dispute;

(2) the refusal to appeal to the Independent Tribunal, so making a constitutional settlement impossible;

(3) the anti-union bias given to the dispute from the outset and the calculated efforts to discredit the responsible trade union leaders at every stage;

(4) the technique of holding meetings which became progressively shorter and were designed only to maintain the appearance of solidarity and exert pressure on any elements that might be unwilling to accept the control exercised by the unofficial leaders.

Pattern of Other Dock Strikes

The report states that much of all this conforms to the general pattern of dock strikes in recent times. The tactics were similar to those used by unofficial leaders elsewhere. This similarity was not surprising in view of the relations between the unofficial Port Workers' Committees in Manchester and London. The Manchester strike was unusual only in its final stage when the tactics of pressure and intimidation were pursued right to the end against the increasing reluctance of the men. As a result the unofficial leaders were completely rejected and not able to preserve any appearance of control against the decision of the men themselves to return to work.

(*Continued on page* 257)

* Cmd. 8375. Report on certain aspects of the Manchester (Salford) Dock strike April-June, 1951 (H.M. Stationery Office. Price 1s.)

COAL AND OIL

LICENCE SYSTEM FOR AMERICAN COAL EXPORTS

A system of licensing is to be introduced for overseas shipments of coal from the United States, with the exception of those to Canada. An order to this effect has been issued by the American Commerce Department, and all such shipments will come under Federal Government allocation and export control on November 1. Although the order is intended to ensure that friendly nations are able to obtain the supplies essential to their economies, its principal purpose is to prevent congestion in Hampton Roads, the principal coal loading port in the United States. Coal is already passing through Hampton Roads at a rate of 36 million tons a year, due to the heavy European demand, which has been swollen by the rearmament programmes at present under way. This heavy traffic has already caused what has been described as "severe congestion," with unusual delays in loading. The waste of shipping space thus brought about tends to nullify the effect of the additional shipping being brought from the U.S. reserve fleet, and this has naturally caused the Americans concern.

Quota of Shipments

Under the control system, each country will be allocated a quota of shipments through Hampton Roads, and any additional coal or coke required must be obtained through other American ports. The procedure to be followed will be similar to that which was in force from 1947 to 1950. A validated export licence, specifying the country of destination and American port of exit, will be issued for each shipment of coal following application by the exporter and approval by the Office of International Trade. This office will serve as claimant agency for determining allocations for all countries except those in which the Economic Cooperation Administration is conducting a programme. E.C.A. will continue to act as claimant agency for these countries, and will assign to them overall allocations and port quotas. The E.C.A. allocations for Western Europe will be determined on a quarterly basis with the advice and assistance of the Organisation for European Economic Cooperation. The initial allocations will cover the two-month period to January 1, 1952. Allocations will be increased as more cargo space becomes available. About 10 per cent of Europe's current coal imports from America are being financed by Marshall plan dollars. These imports of coal by Western European nations account for approximately 80 per cent of American coal exports today. Last year virtually no coal was exported. There was a severe shortage of shipping, and competition for both ships and coal. To meet the demand for shipping space, the rate of withdrawals from the U.S. reserve fleet has been brought up to one ship a day.

Abadan Tankers Aid Kuwait Expansion

Oil tankers diverted from the Abadan refinery have been of great assistance in the expansion of crude oil output in Kuwait, where production is increasing extremely rapidly. During the months of July and August the Kuwait Oil Company loaded over 360 tankers, and it was estimated a few weeks ago that shipments were then at a rate of some 2,850,000 tons a month, an increase of over 50 per cent compared with the rate of shipment in January. Anglo-Iranian tankers are also assisting in the movement of refined products from the United States to compensate for the loss of the Abadan output. Three of these vessels left Philadelphia in one week recently, the *British Confidence* and *British Glory* with petrol for Stockholm and Oslo respectively, and the *British Defender* with gas oil for Suez. The work of the U.S. Foreign Petroleum Supply Committee, acting in conjunction with the British Oil Supply Advisory Committee, has so far been successful in meeting to a large extent the deficit of 650,000 tons weekly caused by the cessation of oil operations in Persia.

Moving Oil Tanks by Water

An ingenious method of moving oil tanks at the Coryton refinery on the Thames estuary is recorded in the current issue of the *PD Review*, magazine of the Powell Duffryn group. The refinery is owned by Powell Duffryn and the Socony-Vacuum Oil Company, through their joint subsidiary, Vacuum Oil Co., Ltd., and when completed in 1953 will process about 850,000 tons of crude oil a year. Four large storage tanks, each 76 ft. in diameter and weighing 100 tons, had to be moved distances varying between 1,200 and 2,000 ft. The problem was solved by cutting a canal system on the site to a depth of 3 ft., which was filled by the pumping into it of over 3,000,000 gallons of water from the Thames. The tanks, which drew only 18 in. of water, were successfully floated, and were then towed by gangs of men to their new sites. The water was then pumped out of the canals again, leaving the tanks in position and on dry land.

Revised Bunker Coal Prices

Information has been received from Cory Bros. & Co., Ltd., that bunker coal prices at the following ports have been altered as shown below:

Port	Price per ton	Rebate	Details
Oran, Algiers, Bona	193s.	2s. 6d.	Trimmed (75 tons or over)
Port Said	223s.	2s. 6d.	South African, f.o.b.
	238s.	2s. 6d.	American, f.o.b.
Suez	275s.	2s. 6d.	South African, f.o.b.
	290s	2s. 6d.	American, f.o.b. (over 50 tons)

OFFICIAL NOTICES

New Companies

S. Bishop (Shipping) Co., Ltd. Registered September 21. Nominal capital: £5,000 in £1 shares. Directors: Not named. Subscribers: V. Hedley, 127 Rosebank Avenue, Elm Park, Hornchurch; A. W. Archbold, 5 Crawford Way, Twickenham (clerk).

Astrolabe Shipping & Trading Co., Ltd. Registered September 20. 115 Old Broad Street, London, E.C.2. Nominal capital: £10,000 in £1 shares. Directors: Not named. Subscribers: N. D. Wood, 26 Manor Drive, Wembley, Middlesex (solicitor); A. W. Pears, 6 Colchester Avenue, London, E.12 (clerk).

[Information from *Jordan's Daily Register of New Companies*]

Increase of Capital

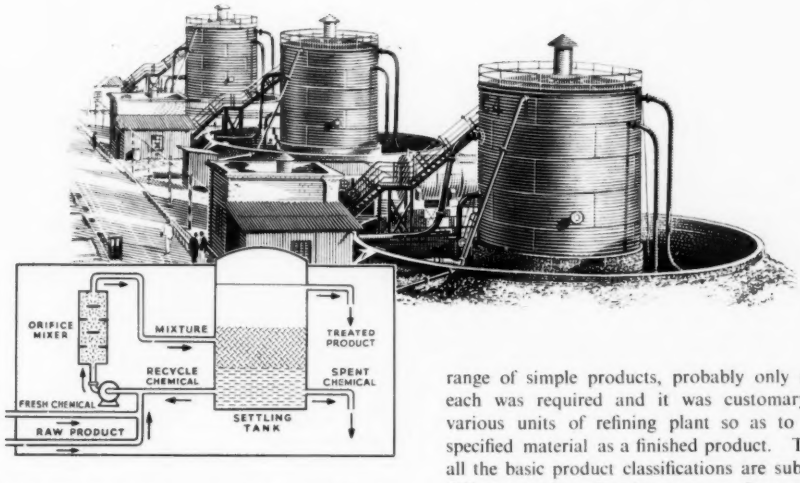
London & Thames Haven Oil Wharves, Ltd., 3 St. Helen's Place, London, E.C.3. Increased by £520,000, in 4s. ordinary shares, beyond the registered capital of £1,780,000.

Tower Hill New Terrace Opened

The New Terrace on Tower Hill was formerly opened by the Lord Mayor of London, Alderman Sir Denys Lowson, on October 3, when Sir John Anderson, chairman of the Port of London Authority, who is president of the Tower Hill Improvement Trust, presented the title deeds to the Lord Mayor. A short service of dedication was conducted by the Rev. P. B. Clayton, Vicar of All Hallows, Barking-by-the-Tower. The New Terrace occupies the combined sites of "Myers Warehouse" and No. 18 Byward Street and marks the attainment of one of the main objects of the Tower Hill Improvement Trust. Further schemes in hand are laying out gardens within the Stepney boundary of Tower Hill, which will open up one of the remaining sections of the Roman Wall. The Trust was initiated in 1934 by the Rev. Clayton. In the evening parishioners of All Hallows and members of Toc H were entertained to a concert party on the New Terrace.

INTERESTING FACTS ABOUT OIL

No. 6. *How is oil chemically treated and blended?*



The initial distillation process results in products which are unsuitable for the market because they contain small quantities of undesirable constituents which must be chemically removed.

Chemical refining is carried out by reagents such as caustic soda, sulphuric acid, sulphur dioxide, alkaline sodium plumbite solution, organic solvents and certain solids such as bauxite and activated clays, which have special selective properties for the removal of undesirable constituents. The products are thus improved not only in performance, but in such qualities as stability, colour, and smell which are important in their marketing.

Most chemical refining is carried out in "washeries"; plants in which the raw products are mixed and "washed" by agitation with suitable reagents. Filtration is also employed with bauxite activated clays.

No refinery would be complete today without adequate blending installations. When a refinery made a small range of simple products, probably only one grade of each was required and it was customary to operate various units of refining plant so as to produce the specified material as a finished product. Today, almost all the basic product classifications are sub-divided into different grades. For instance, a refiner may make two or three grades of motor spirit, and several grades of fuel oil. Thus, it is more convenient to operate the refining plant to produce and store a number of refined blending stocks, which may be regarded as intermediate products; they are rarely used for direct sale, but are incorporated in finished blended products. A further advantage of this system is that the refiner need not make up a finished blend until called upon to do so; thus his storage problem is simplified.

Blending operations need to be carefully controlled under strict laboratory supervision and the finished blend fully tested before being made ready for sale.

WM CORY & SON LTD GENERAL BUNKER SALES AGENTS

INTERNATIONAL OIL BUNKERING
BP
ANGLO-IRANIAN OIL COMPANY LIMITED

WM CORY & SON LTD., CORY BUILDINGS, FENCHURCH STREET, LONDON, E.C.3

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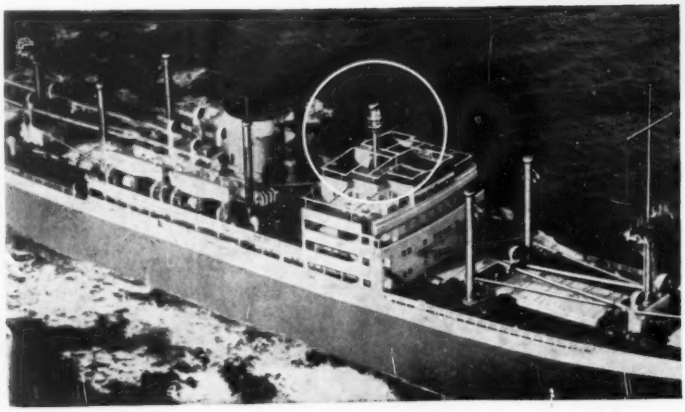
BTH marine radar is type tested and fully approved by the Ministry of Transport and is speedily fitted because of its pre-fabricated construction.

For technical specification ask for BTH publication AG-772.



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TRAIN FERRY STEERING GEAR

ARRANGEMENT OF BOW AND STERN STEERING IN THE "SAINT GERMAIN"

EXCEPTIONAL manœuvring qualities are essential in a train ferry, which is required to enter and leave, either stern first or bow first, an impounding lock of restricted dimensions in order to effect a safe rail connection between ship and shore. The latest vessel of this type to enter service is the *Saint Germain*, built by the Elsinore Shipbuilding & Engineering Company for the French State Railways service between Dunkirk and Dover, and already described and illustrated in THE SHIPPING WORLD. The steering gear for this ship was supplied by John Hastie & Co., Ltd., Kilblain Engine Works, Greenock, and a representative of THE SHIPPING WORLD had an opportunity of inspecting the operation of this gear in service conditions.

The problems which arise in connection with the *Saint Germain* on the Dunkirk-Dover run are particularly difficult. At the French end, the ship arrives in the sea lock which contains the waters of Dunkirk Harbour. With the aid of a single tug, she proceeds through this lock, turns and backs into her ferry slip, which has been built out alongside a quay. "Finger tip control" of steering is an essential to enable this berthing to be done perfectly. At the Dover end, she arrives at the eastern entrance to the harbour, turns, and then proceeds to the impounding lock. Dover is a tidal harbour, and before the train ferry service could be inaugurated from that port, it was necessary to build a lock into which the ferry could proceed to be pumped up to the level of the loading apron, the reverse procedure taking place according to the state of the tide when the ship left. The *Saint Germain's* bow rudder facilitates her movement into the lock.

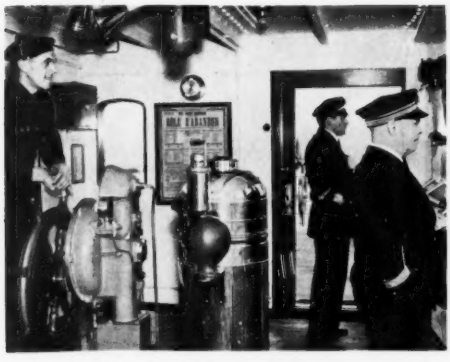
For the general manœuvring of the ship about the banks and tortuous channels existing between Dunkirk and Dover the movement of the rudder must be accurately controlled. When the ship is running astern, control of the ship is from the port or starboard wings of the bridge, according to navigational demands, and under these circumstances the ship depends on the action of her main engines and on the ready operation of her forward or bow rudder to see that she reaches the impounding lock safely. It is not surprising, therefore, that the steering arrangements of the new French ferry were carefully studied in the design stage and that experience gained with former steam-driven ferries was taken into consideration. Two steering gears were fitted to this vessel, one for controlling the aft rudder, and one for the forward rudder. The space available for fitting the gears was limited, but by making special arrangements, the electric hydraulic steering gears supplied fitted neatly into the space available.

The aft steering gear consists of a two-ram electric hydraulic gear, with the rams and cylinders arranged parallel to each other, and connected by steel connecting rods to a tiller on the rudderstock. Control of the rudder is effected by two Hastie type Hele-Shaw pumps, each driven by an 18 h.p. electric motor. Each pumping unit is capable of moving the rudder from hard-over to hard-over in 25 seconds, with the vessel proceeding at full speed ahead, and exerting a twisting moment on the rudderstock of 60 ft./tons. Arrangements are made, however, so that both pumps can be operated simultaneously. Thus, in the event of failure of the electric supply to one pumping unit, steering can be carried on without interruption. Automatic starters are provided for the electric motors, and push button "start" and "stop" control is arranged on the engineroom platforms. Control of the steering gear is by hydraulic telemotor of Hastie's latest type, consisting of a transmitter on the fore bridge, and a transmitter on the boat deck aft. These transmitters provide control of the stern rudder from either position.

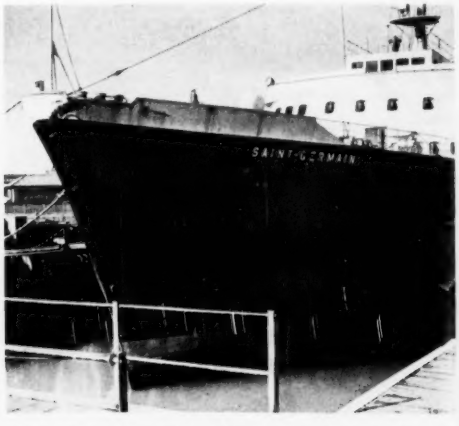
Steering Gear for Forward Rudder

The steering gear for the forward rudder is of the same type as that for the aft rudder, except that one electric motor and Hastie type Hele-Shaw pump is used in this instance. This pumping unit is capable of moving the rudder from hard-over to hard-over in 25 seconds when the vessel is proceeding at its full speed astern, and control of the steering gear is effected by telemotor. A telemotor of Hastie's latest type is placed on the starboard wing of the forward bridge, with the wheel faced aft for steering, and connected in the usual way to the receiver at the bow steering gear. A system of cross connecting shafting on ball bearings is arranged from this transmitter to a second steering pedestal on the port wing of the forward steering bridge, so that complete control of the bow rudder can be effected from either side of the vessel. Special attention was paid in the design to provide for the utmost simplicity when changeover of steerng positions is required.

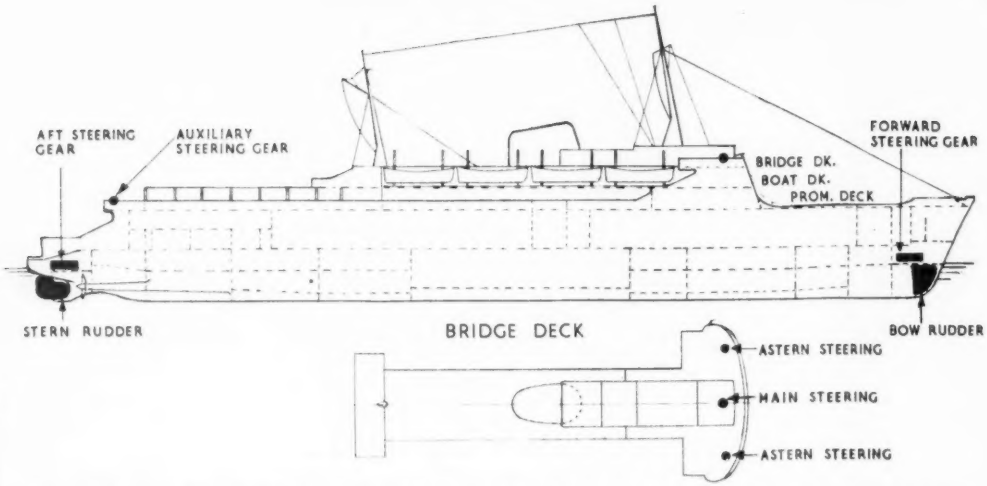
Hastie steering gear has also been installed in the



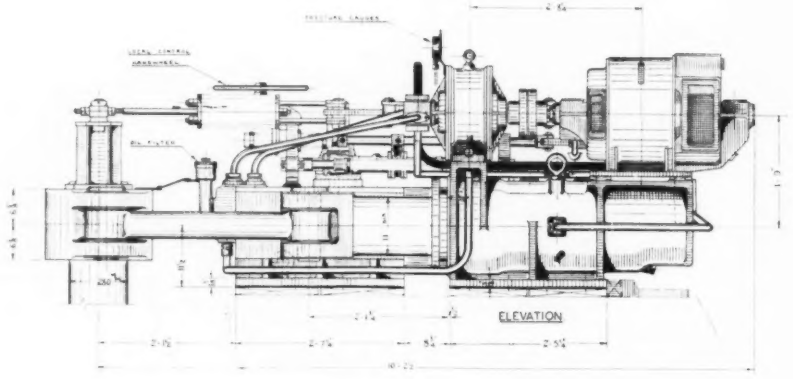
Steering position in wheelhouse. The port bow rudder position can be seen outside door

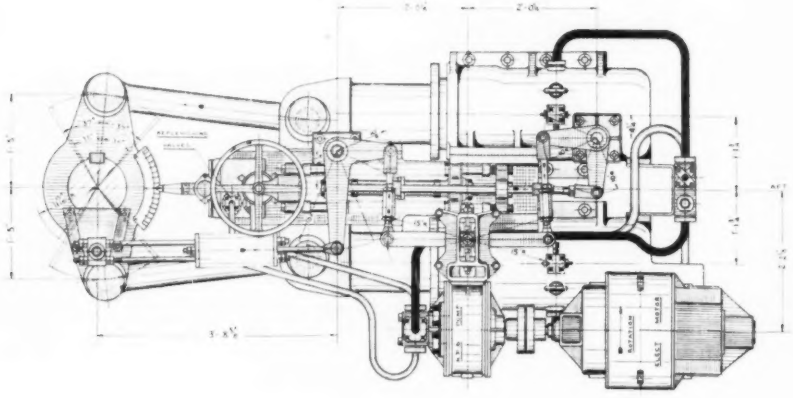


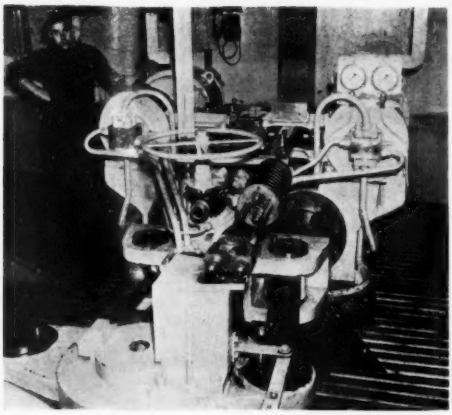
Bow rudder of the "Saint Germain" in impounding lock at Dover



Hastie steering gear in the train ferry "Saint Germain." The plan and elevation of the bow rudder steering is shown below. Arrows indicate direction of telemotor control gear and rams to put rudder to starboard when ship is going astern. Shaded pipes indicate pressure lines to put rudder to port







Hastie steering gear in aft compartment

New Grand Haven, a train ferry recently built by Canadian-Vickers, Ltd., for the Palm Beach-Havana run and illustrated in THE SHIPPING WORLD of August 8. In this ship a slightly different arrangement was made because the vessel is provided with only one steering gear for the stern rudder, no bow rudder being fitted. The steering gear is of Hastie's 4-ram electric hydraulic type, and consists of four rams working in four hydraulic cylinders, each pair of rams operating on one arm of a steel tiller, which is attached to the rudderstock. Power for operating the rams is supplied from two Hastie type Hele-Shaw pumps each driven by an electric motor of 50 b.h.p.

Each pumping unit is capable of moving the rudder from hard-over to hard-over in 20 seconds when the vessel is proceeding at full speed ahead, and exerting a twisting moment on the rudderstock of 207.8 ft./tons. Arrangements are made so that both pumping units can be operated simultaneously, providing for a faster movement of the rudder than the specified 20 seconds, also providing that, in the event of failure of the electric supply to one pumping unit, the remaining pumping unit will carry on the operation of the rudder without interruption.

Control of this steering gear is by telemotor, and the arrangement of telemotor is that one of Hastie's latest type telemotors is placed on the fore bridge and a second on the aft docking bridge, arrangements being made for a simple changeover from the one telemotor transmitter to the other.

The September number of the Saunders-Roe house magazine, *The New Slipway*, contains an article by Mr. S. A. Macey, chief loftsman, on "Lofting and Lofting Reproduction in the Aircraft Industry."

A catalogue has been produced by the Quasi-Arc Co., Ltd., listing and illustrating the entire range of electrodes, plant and accessories manufactured by the company for automatic and manual welding. Notes on the choice of the correct electrode for particular types of work and the choice of the correct arc welding plant are also given.

The British Standards Institution has issued a further document (B.S. 1721; price, 4s.) in the series of standards covering portable fire extinguishers dealing with portable fire extinguishers of the carbon tetrachloride type. This standard is an entire revision of that part of B.S. 740 which covered carbon tetrachloride fire extinguishers.

The Paints Division of Imperial Chemical Industries, Ltd., has produced a booklet entitled *The Painter of Tomorrow*, which includes articles by leading people, representing a wide range of opinion, on the various aspects of the subject. One of the articles concerns the education and training of apprentices in the painting trade.

ROUND THE SHIPYARDS

Scotland Watches Steel Scarcity

By THE SHIPPING WORLD'S Own Correspondent

THE THREATENED scarcity of steel came closer to Scottish yards in September, when supplies proved tight enough to force idle time on at least one yard. In Aberdeen, John Lewis & Sons, Ltd., found themselves forced to cut 50 men off for two weeks in four because of slow deliveries of steel. In effect the staggering meant that the yard worked at half labour capacity and threw its two years of ordered work still further into arrears. The employees naturally sought to correct this position by appeals for more steel to the Town Council, to their M.Ps and to other local interests. Obviously any diversion of shipbuilding steel to Aberdeen—much needed as it was—would draw steel from yards already in possession, and equally anxious to retain supplies. Clyde yards are perhaps favoured by proximity and by business ties to the steel areas, but in any case diversion alone can scarcely be the solution. The urgent need in Scotland, as in England, is a large expansion of steel production, and this is, unfortunately, dependent on scrap supply.

A feature of the month has been the intake of work by some of the smaller yards. In the industry as a whole this may not mean a great deal, but it does make a vital difference to the yards concerned, and it means that the overall balance of types of construction is being maintained. Ferguson Brothers, Ltd., for instance, are building two powerful tugs for the Clyde Shipping Co., Ltd., of an advanced design and increased power. The Paisley yards are taking fresh orders for Burma as well as for Persia, while James Lamont & Co., Ltd., of Port Glasgow, have booked another 1,500-tons ship for John Kelly, Ltd., of Belfast, who have also ordered two small cross-channel coasters from George Brown & Co. (Marine), Ltd., Greenock.

Many New Contracts

A less satisfactory feature is the fact that some of these yards have not the reserves of materials held by the larger yards, owing to the limited demand earlier in the year for small tonnage work. Now, with an improved volume of work on hand, some of the smaller yards are facing a more difficult situation than are the larger yards for steel and materials in general.

New contracts announced recently cover a wide variety of types of ship. The Anchor Line placed two orders in late August, one at Lithgows, Ltd., and one with Doxford's. The new liners are to be sister ships of the *Tahsinia*, built by Lithgows in 1946, although incorporating a number of improvements. Delivery is provisionally given as June 1955. Wm. Simons & Co., Ltd., have booked a 155-ft. long harbour tug for the South African Railways & Harbour Administration. They have already on hand a dredger of some 3,000 to 4,000 tons gross for the same owners and other work for the Clyde Navigation Trust.

Fleming & Ferguson, Ltd., of Paisley, who have a considerable amount of dredger, ferry and tender work on hand, have received an order for a twin-screw trailing suction hopper dredger for the Burmese Government. Norwegian reports, so far unconfirmed, indicate that further orders are being placed on the Clyde for Kristiansand owners, and Wm. Hamilton & Co., Ltd., of Port Glasgow, are mentioned in this connection. There is also a strong possibility that Lithgows, Ltd., will build two ore carriers for a new company, Scottish Ore Carriers, Ltd. Scotts' Shipbuilding & Engineering Co., Ltd., shared in the orders placed by the Sugar Line, Ltd., with one 9,500-tons d.w. bulk sugar carrier.

Among the month's launchings were the *Anno*, a 300-tons motor cargo vessel from Hall, Russell & Co., Ltd., for Newburgh, Aberdeenshire, owners, in which centrally heated accommodation for the crew emphasises the trend towards increased crew comfort. Scotts' launched the *Eboe*, of 9,500 tons gross, for the West African trade of Elder Dempster Lines in September.

NORDBERG "SUPAIRTHERMAL" ENGINE

USE OF INTERCOOLED AIR WITH MILLER SUPERCHARGING

AN INTERESTING development designed to increase the rating and capacity of modern diesel engines has been produced by the Nordberg Manufacturing Company, of Milwaukee, Wis., U.S.A., in the form of the "Supairthermal" engine, for which world patents are now pending. A culmination of six years of research, development and testing, the Supairthermal engine bases its increased efficiency on the fact that the lower the temperature of the air in the cylinder at the time the fuel is injected, the greater the amount of fuel that can be burned, and the higher the output obtainable without increasing peak temperatures or pressures.

The Nordberg Supairthermal engine is available in a complete range of sizes from 425 to 3,200 b.h.p. for marine and stationary applications. The engines are of the four-stroke type, and are built for operation on diesel fuel, "Duafuel" and spark-fired gasoline. The engine's most notable characteristic is its ability, in any given size, to produce one-third more horsepower than the conventional supercharged engine, with no greater heat to the cooling water and without increasing the internal surface temperatures or pressures.

Potential Power Wasted

Although diesel engines are the most efficient means of converting fuel to power, more than 60 per cent of the potential power in the fuel is wasted in the form of heat. A part of this heat goes out through the exhaust pipe and presents no problems, although it is wasted. Another large portion must be removed from the engine by means of the cooling water and lubricating oil.

Most modern diesel engines, although structurally able to yield a greater horsepower, have reached the point where their safe rating is limited by the inability of the surfaces in contact with the combustion gases continuously to withstand higher temperatures without heat failure or the destruction of piston ring lubrication. The turbocharged four-stroke diesel engine marked one of the earlier achievements in overcoming these limitations and resulted in increasing engine ratings by some 50 per cent.

An important advance made by Nordberg in increasing the capacity of a four-stroke supercharged engine was to cool the intake air after its passage through the turbocharger. Intercooling, as it is called, is achieved with a finned tube type of air-to-water heat exchanger built into the engine, through which the cooling water is circulated before going to the normal jacket water cooling system. Where cooling water is available at a temperature which will cool the intake manifold air temperature to 90 deg. F., intercooling will raise the engine rating by about 15 per cent, with no greater heat load on the cooling water and no increase in surface temperature.

The Nordberg Supairthermal engine uses the Miller system of supercharging and improves on the conventional turbocharged engine in four important ways:—

(1) A greater amount of air cooling within the cylinder is accomplished by blowing a larger volume of cooler air through the cylinder and out through the exhaust pipe.

(2) The turbocharger delivers air to the cylinder at a higher pressure, thus providing 30 per cent more weight of air and making it possible to burn more fuel.

(3) By means of an intercooler on the discharge side of the turbocharger, the temperature of the intake air is cooled before it enters the cylinder.

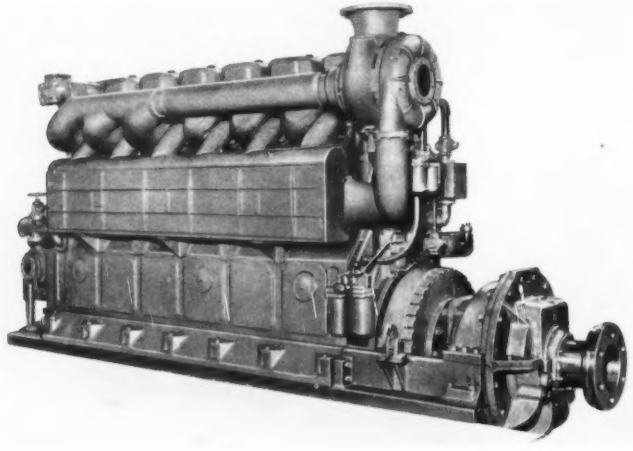
(4) By closing the intake valve before the end of the intake stroke, the air within the cylinder is expanded from 15 to 6 lb. per sq. in. at full load, and the intake air is thereby cooled another 50 deg. F.

Exhaust Turbocharger

The turbocharger used with the Supairthermal engine is driven by the exhaust gases, and requires no power from the engine. At rated full load it delivers air to the intercooler at 15 lb. per sq. in. Because of this compression within the turbocharger, the air temperature increases about 160 deg. F. But the intercooler cools the air to within 10 deg. F. of the cooling water temperature. With 90 deg. F.

TABLE I

	Low pressure supercharged (non-intercooled)	Supairthermal engine
Engine bore and stroke (inches)	13 × 16½	13 × 16½
Revolutions per minute	450	450
Piston speed (feet per minute)	1,237.5	1,237.5
Maximum firing pressure (p.s.i.g.)	850	850
Brake h.p. for continuous service	150	200
Brake mean effective pressure	120	160
Ambient temperature (deg. F.)	90	90
Air temperature at supercharger discharge (deg. F.)	142	250
Air temperature to intercooler (deg. F.)	—	250
Water temperature to intercooler (deg. F.)	—	90
Air temperature after intercooler (deg. F.)	—	100
Air temperature entering engine (deg. F.)	142	100
Air temperature at beginning of compression (deg. F.)	142	50
Air pressure at supercharger discharge (p.s.i.)	4	15
Air pressure entering engine (p.s.i.)	4	15
Air pressure at beginning of compression (p.s.i.)	4	6
Heat to cooling water, B.Th.U./minute per b.h.p.	16.20	12.15
Total B.Th.U./minute at above rating	2,430	2,430
Heat to lubricating oil, B.Th.U./minute per b.h.p.	6.66	5.80
Total B.Th.U./minute at above rating	1,000	1,160
Heat removed by intercooler, B.Th.U./minute per b.h.p.	—	8.2
Total B.Th.U./minute at above rating	—	1,645
Typical comparable fuel consumption rate on dynamometer test, lb./b.h.p./hr.		
Full load	.375	.369
75 per cent load	.370	.355
50 per cent load	.375	.365
Mechanical efficiency at full load per cent.	83.2	85.4



The Nordberg 8-cylinder 800 h.p. "Supairthermal" engine fitted in a new American tug

cooling water the air thus enters the engine cylinders at 15 lb. relative pressure and 100 deg. F.

The point at which the intake valve closes during the intake stroke is automatically controlled by the pressure in the intake air manifold. For example, with a 15 lb. per sq. in. manifold pressure, which is normal at full rated load, the intake valve closes 45 deg. before the end of the intake stroke. This is an important difference between the Supairthermal cycle and that of the conventional supercharged engine, where the intake valve remains open until the end of the intake stroke. The air in the cylinder is expanded from 15 to 6 lb. per sq. in. pressure as the piston continues downward to the end of the stroke. Because of this expansion, the temperature drops from 100 to 50 deg. F.

As the manifold pressure decreases at part loads the intake valve closes later, so that the air pressure at the beginning of the compression stroke remains at 6 lb. At light loads, where the intake manifold pressure is 6 lb. or less, the closing of the intake valve is fully retarded and the pressure and temperature at the beginning of the compression stroke are the same as in the intake manifold after the intercooler.

Table I gives comparative data on a per cylinder basis for Nordberg four-stroke, 13 in. bore, 16½ in. stroke, conventional turbosupercharged and Supairthermal diesel engines.

A new tug owned by the Foss Launch & Tug Company, Tacoma, Washington, is powered by an 800 h.p. eight-cylinder, 13 in. by 16½ in. direct drive, direct reversing Supairthermal engine.

The Late Sir Norman Thompson

The death has occurred, at the age of 73, of Sir R. Norman Thompson, chairman of Joseph L. Thompson & Sons, Ltd., Sunderland. Sir Norman, who was a great-grandson of the founder of the company, became chairman on the death of Sir James Marr in 1932. In 1946, the centenary year of Joseph L. Thompson & Sons, he was knighted for his services to shipbuilding. He was also a director of T. W. Greenwell & Co., Ltd., Sir James Laing & Sons, Ltd., John Crown & Sons, Ltd., the Sunderland Forge & Engineering Co., Ltd., and the Wolsingham Steel Company. On leaving college, Sir Norman joined the former firm of John Dickinson & Sons, Ltd., later serving for two years as a seagoing engineer. He joined Joseph L. Thompson's in 1901 and took charge of the Manor Quay Works, the same year being appointed a director. He was a former chairman of the Silver Line, Ltd., and from 1939 to 1942 he was chairman of the Wear Shipbuilders' Association. He was also chairman of the Sunderland branch and a member of the Council of the North-East Coast Institution of Engineers & Shipbuilders. Sir Norman was a liveryman of the Worshipful Company of Shipwrights and from 1930 to 1948 was a member of the River Wear Commissioners. He also served on the Committee of Lloyd's Register for a number of years, and was a member of the Institution of Naval Architects.

A NEW centre of the Institute of Traffic Administration is being formed at Hull.

MANCHESTER DOCK STRIKE

(*Continued from page* 251)

The general survey concludes with the following words:

To sum up, an organisation seems to have been created in Manchester that was all ready to take advantage of the dispute when it occurred. This organisation obviously owed its origin to the Port Workers' Committee in London and the unofficial leaders seemed to have gone to unusual lengths to keep the strike alive. The strike only ended when the men repudiated them completely. It would appear, however, from the pamphlet issued after the strike, that the unofficial organisation has an interest to keep itself in being for the future and remain in a position to take advantage of any further opportunity for creating trouble.

The general background of the dispute is given in Part II of the report, which describes the joint negotiating arrangements in Manchester and deals particularly with points on which grievances about the machinery were alleged to exist. Part III of the report gives a day-to-day account of the dispute.

RECENT TECHNICAL DEVELOPMENTS

Watchman's Control System

A new watchman's control system has been designed by Blick Time Recorders, Ltd., 188-190 Gray's Inn Road, London, W.C.1, to overcome the weaknesses of older systems pointed out by Scotland Yard. It has been designed also to meet the requirements of the Ministry of Works, which is the biggest purchaser of this type of equipment in Great Britain. The system is suitable for use in shipping offices, shipyards, and all similar establishments. Station boxes with engraved keys are installed at suitable points on the premises, and the watchman is provided with a Blick 8-day watchman's clock, contained in a stout leather case with shoulder strap. On reaching each station he records the time and the station code letter merely by inserting the key into the clock, inside which each recording is clearly printed, in any of five selected colours, and embossed on a calibrated tape long enough to provide a full week's record. It is claimed that the system materially reduces the risk of fire, burglary or pilferage.

Portable Hardness Tester

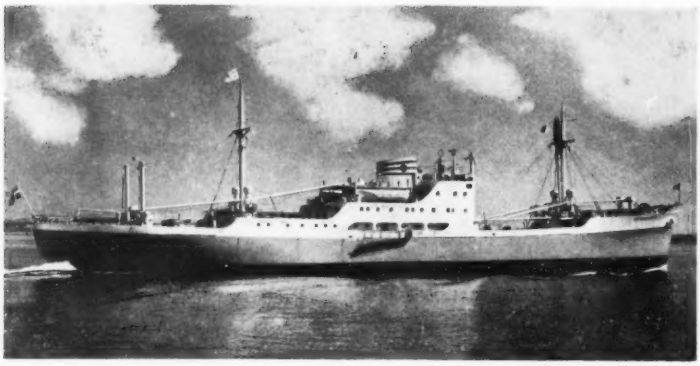
A practical precision instrument for testing the hardness of metals, already in use in a number of shipyards and engineering shops, is the "Penetrascope," produced by the Cabul Tool Co., Ltd., 46/48 Battersea Bridge Road, London, S.W.11. The "Penetrascope" is a practical portable instrument employing the 136 deg. diamond indentor principle. Diamond Pyramid hardness numbers are obtained by the use of British Standard Tables No. 427 (1931), which are supplied with each instrument. Fitted with a chain clamp, it can be used on diameters of almost any dimension. Equipped with various specially designed clamps, including permanent and

The "Penetrascope" in use on a plough blade

electro-magnetic fixtures, the "Penetrascope" can test the hardness on both the outside and inside of the most irregularly shaped pieces of metal, as shown in the illustration. It is claimed that the "Penetrascope" avoids the laborious and wasteful operation of cutting off test pieces as, with a "Penetrascope" tests can be carried out *in situ*. The weight of the instrument is only 11 lb. The sole sales agents are C. Tennant, Sons & Co., Ltd., 4 Copthall Avenue, London, E.C.2.

Underwater Television for Fishery Research

An important field of research is being developed at the Scottish Marine Biological Research Station, Millport, by a grant for underwater television on investigations. Prof. C. M. Yonge, president of the Association, has indicated that E.M.I. Research Laboratories, Ltd., are cooperating in preparing equipment for use on their research vessel with a view to study of shoals, marine habits and feeding habits, as well as a greater knowledge of actual food sources. It is also intended to use the television equipment to allow the focusing of underwater cameras for permanent records and for the reading of instrument recordings at various depths. While the initial work must of necessity be investigatory, there is every confidence that underwater television can provide factual answers to many problems and give guidance on fishing matters which must be of great ultimate value to the fishing industry. The camera tube is stated to be a C.P.S. Emitron and the equipment will be fed from an electrical unit housed, with all other necessary apparatus, in the research vessel. This work is likely to begin early next year.

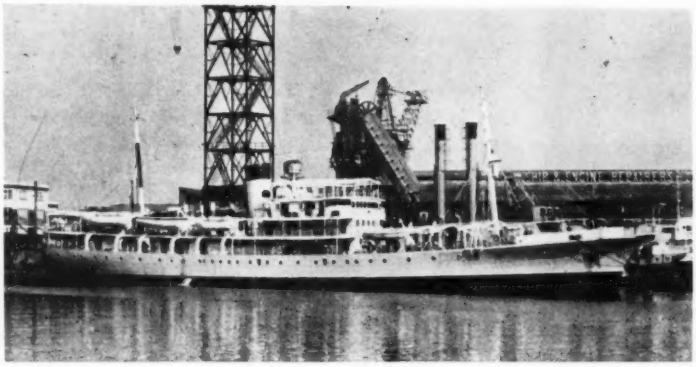


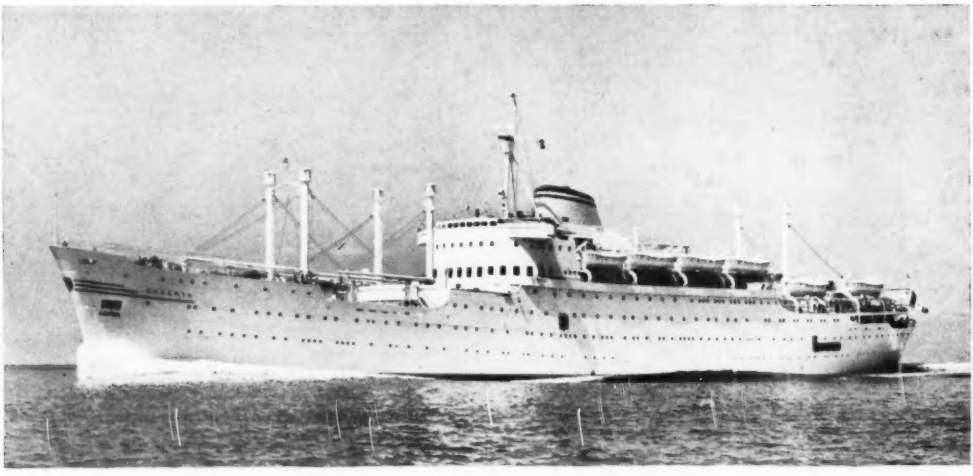
Cargo liner "Paranagua"

The single-screw motor cargo liner *Paranagua* has been completed for Rederi A B Disa (Erik Brodin), of Stockholm, by Oresundsvarvet A B, Landskrona. Of about 2,450 tons gross, the vessel has a deadweight of 3,775 tons with a draught of about 19 ft. 3 in. Her principal dimensions are 330 ft. length b.p., 47 ft. breadth moulded and 19 ft. 10 in. depth moulded to main deck. There is accommodation for four passengers in two two-berth cabins, while all the crew accommodation is situated amidships. The propelling machinery has been supplied by Gotaverken A B, Gothenburg, and consists of an 8-cylinder two-stroke single-acting diesel engine. This engine develops 3,700 e.h.p. and provides the ship with a fully loaded speed of 14½ knots

French Cable Ship "Ampere"

A cable ship has been delivered to the French Department of Communications by the Chantiers de Normandie, Grand Quevilly. She is the turbine steamship *Ampere*, a vessel of 2,100 tons gross with a loaded displacement of 3,465 tons. With dimensions of 289 ft. 11 in. length o.a., 272 ft. 4 in. b.p., 41 ft. 2 in. breadth moulded and 25 ft. 4 in. depth to main deck, she has a deadweight of 1,611 tons on a draught of 16 ft. 11 in. There are twin screws driven by two sets of geared steam turbines supplied by the parent company of the shipbuilders, Chantiers et Ateliers de St. Nazaire (Penhoet). Steam is supplied by two Penhoet boilers. The designed speed of the vessel is 14 knots, with the machinery developing 2,500 h.p. at 129 r.p.m. The propellers are of the variable-pitch type





Passenger liner for Lloyd Triestino

Of about 13,000 tons gross, the twin-screw diesel-driven passenger liner *Oceania* has been handed over to her owners, Societa per Azioni di Navigazione Lloyd Triestino, by the Trieste yard of Cantieri Riuniti dell'Adriatico. She is the last of three sister ships completed at Trieste for the same owners and has dimensions of 520.2 ft. length o.a., 484.9 ft. b.p., 69.2 ft. breadth and 28.6 ft. depth, with a draught of 26.6 ft. The deadweight of the vessel is 7,700 tons. A service speed of 18 knots is maintained by two 5-cylinder two-stroke single-acting Sulzer-type diesel engines. Supplied by the shipbuilders, the machinery develops a total of 7,000 h.p.

NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
			Gross	Deadweight						
Kristiansand owners	1	Tanker	—	13,500	—	—	Diesel	—	—	Wm. Hamilton
Olsen & Ugelstad, Oslo	2	Canadian Lakes cargo	—	2,700 (each)	—	—	Diesel	—	—	John Crown
Reardon Smith Line	2	Cargo	—	9,100 (each)	—	13	4-cyl. diesel	—	Shipbuilders	Wm. Doxford
Thor Thoresen & Co., Oslo	1	Tanker	—	16,000	—	—	Doxford diesel	—	Shipbuilders	Fairfield S.B.
Gulf Oil Corpn., New York; and S. Ugelstads Rederi A/S, Oslo (1 each)	2	Tankers	—	32,000 (each)	—	—	Dble.-red. geared turbine	12,500 (each)	Richardsons, Westgarth	Furness S.B.

Commonwealth and Foreign Yards

—	1	Cargo	600	1,000	200.2 × 34.5 × 19.4	—	Diesel	—	—	Atlas Werke, Bremen
Julius Sickenpack, Hamburg	1	Trawler	—	—	175.2 b.p. × 28.9 × 16.4	—	Steam	875	—	Norderwerft, Hamburg
Hochseefischerei Nordstern A.G., Wesermunde (3); Cuxhavener Hochseefischerei, Cuxhaven (2)	5	Trawlers	—	—	—	—	—	—	—	A. G. Weser, Seebeck, Bremerhaven
Grundmann & Groschel, Bremerhaven	1	Trawler	—	—	—	—	Steam	—	—	Schiffbau-ges. Unterweser, Bremerhaven
Reederei und Transport Ges., Hamburg	1	Fishing cutter	40	—	—	—	Diesel	—	—	D. W. Kremer Sohn, Elmshorn
Biorn Biornstad & Co., Oslo	1	Tanker	—	31,000	—	—	Steam turbine	—	—	Netherlands Dock & S.B. Co.
German owners	2	Cargo	2,000 (each)	—	287.65 × 44.6 × 27.2	—	Diesel	—	—	Elsflether Werft, Elsfleth
Jorgen Bang, Kristiansand	1	Tanker	—	16,500	—	—	Diesel	—	—	Kockums M.V., Malmo
A/S Jensens Rederi III, Arendal	1	Cargo	—	9,150	—	14.5	6-cyl., 2-str. B. & W. diesel	6,000	—	Eriksbergs M.V., Gothenburg
Firma Gustaf Erikson, Mariehamn	1	Cargo	—	4,000	—	—	Stork diesel	—	—	J. & K. Smit's Scheeps., Kinderdijk
A/S Thor Dahl, Sandefjord	1	Cargo liner	—	7,750	—	15-16	—	—	—	Bergens M.V.
Richard Ameln & Co., Haugesund	1	Tanker	—	4,100	—	—	—	—	—	A/S Stord, Bergen

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
				Gross	Deadweight						
Sept. —	East Anglian Ice Cold Storage Co.	*B. R. Banks*	Trawler	100	—	—	—	Diesel	—	—	Richards Ironworks, Lowestoft
Sept. 21	Esso Pet. Co.	*Esso Norfolk* (S.677)	Tank barge	131	—	—	—	—	—	—	Richard Dunston, Hessle
Oct. 3	Stavros G. Livanos, Piraeus	*Atlantic Duke*	Tanker	11,000	16,500	528.83 o.a. and 500 b.p. × 69.5 × 38	13.25	5-cyl., 2-str. Doxford diesel	5,500	Hawthorn, Leslie	Smith's Dock
Oct. 3	National Sea Products, Halifax, Nova Scotia	*Cape Argos*	Trawler	395	—	137 b.p. × 26.5 × 13.75	—	Tr.-exp. steam	—	Amos & Smith	Cochrane & Sons
Oct. 3	Houlder Line	*Oswestry Grange*	Cargo	8,300	—	475 o.a. and 450 b.p. × 61.5 × 40	12.75	4-cyl. Doxford diesel	3,780	Shipbuilders	R. & W. Hawthorn, Leslie
Oct. 3	North American Shipping & Trading Co. (London)	*Saxonglade* (127)	Tanker	13,000	20,000	555.5 o.a. and 528 b.p. × 75 × 40	14.5	Dble.-red. geared turbine	—	Shipbuilders	Vickers-Armstrongs, Walker
Oct. 3	Royal Interocean Lines, Amsterdam	*Tjibantjet*	Cargo	5,500	8,900	474 o.a. and 440 b.p. × 61.25 × 29.75	16.25	6-cyl. Doxford diesel	6,800	N.E. Marine	Bartram & Sons
Oct. 3	Moss Hutchison Line	*Tabor* (482)	Cargo	—	4,800	360 b.p. × 55 × 32.5	15	4-cyl. Doxford diesel	4,400	Hawthorn, Leslie	Caledon S.B.

TRIAL TRIPS

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
				Gross	Deadweight						
—	Union-Castle Line	*Rhodesia Castle* (1431)	Pass. and cargo liner	17,300	—	556.3 × 74.2 × 31.9	—	Tw.-scr., dble.-red. geared turbine	—	Shipbuilders	Harland & Wolff, Belfast
—	Cia. Nacional de Nav., Lisbon	*Save* (494)	Cargo and pass.	2,300	1,250	240 × 41.25 × 14 (draught)	—	Tw.-scr., 5-cyl. diesel	1,800	British Polar Engines	Grangemouth Dockyard
Sept. —	Alexandra Towing Co.	*Gladstone* (1370)	Tug	230	—	99 b.p. × 26.5 × 13	—	Tr.-exp. steam	1,000	Chas. D. Holmes	Cochrane & Sons
Sept. 26	British Electricity Authority	*Brunswick Wharf* (409)	"Flat-iron" collier	1,730	2,700	257 l.w.l. × 39.5 × 18.5	10.5	Tr.-exp reheat steam	—	George Clark (1938)	S. P. Austin
Oct. —	Elder Dempster Lines	*Aureol* (629)	Pass. and cargo liner	13,600	—	538 × 70 × 36.5	16	Tw.-scr., 4-cyl., 2-str. Doxford diesel	10,860	Shipbuilders	Alex. Stephen
Oct. —	Fred Olsen & Co., Oslo	*Bolsta* (1419 G)	Tanker	16,400	24,500	623.5 o.a. and 580 b.p. × 78 × 42.5	—	Sin.-scr., 7-cyl., 2-str. B. & W. diesel	—	Shipbuilders	Harland & Wolff, Govan

Commonwealth and Foreign Yards

Sept. 21	Swedish American Line, Gothenburg	*Vibyholm* (415)	Cargo liner	4,365	6,250	400 b.p. × 57.66 × 25.25	16.5	7.-cyl. B. & W. diesel	6,700	Shipbuilders	Eriksbergs M.V., Gothenburg
Sept. 27	Sigurd Herlofson & Co., Oslo	*Tank Princess* (335)	Tanker	9,000	13,500	513.75 × 62.5	14	6-cyl. Gotaverken diesel	—	—	Fredriksstad M.V.

Coast Lines Appointments

AS already announced, Mr. L. W. S. Grinling (*left*) has been appointed chief general manager of Coast Lines, Ltd., and Mr. C. V. Jones (*right*), together with Mr. H. G. Sorrell, has been made a joint general manager of the company. Mr. Grinling served an apprenticeship with the South Eastern & Chatham Railway, and during the First World War was with the Railway Transport Establishment in France, becoming Assistant Director of Railway Transport. In 1920 he joined the London staff of the Manchester Ship Canal Company. He entered Coast Lines in 1925, later becoming chief traffic manager at Liverpool, and subsequently commercial manager and chief commercial manager. Mr. Jones, after experience in the Liverpool Cotton Market, joined Coast Lines in 1927, and in 1933 was appointed secretary to the general manager. From 1937 to 1938 he was assistant to the quay manager at Belfast, being appointed manager of the Coast Lines' Bristol office in 1938. After service during the Second World War he rejoined the company at Liverpool, later returning to Bristol as manager. Mr. Jones was appointed manager of the company in 1947 and returned to Liverpool to take up his duties

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

THE THIRD Mechanical Handling Exhibition and Convention to be organised in Great Britain is to be held at Olympia, London, from June 4 to 14, 1952. The exhibition will be the largest of its kind in the world. There will be nearly 200 exhibitors, covering every type of mechanical aid—pallets, trucks, cranes, aerial ropeways, overhead conveyors, belt conveyors, elevators, wagon tipplers, winches, power units, chains, gears, controls and all other accessories. About 12 papers by leading specialists will be read during the convention and the Institution of Production Engineers is to have an all-day session.

SUNVIC CONTROLS, LTD., have acquired a new factory on the industrial estate at Harlow New Town. The works and offices previously located at 132/135 Long Acre, London, W.C.2, have removed to Harlow, where production has already started. The sales department is now at 132/135 Long Acre, and inquiries should in future be sent to that address. The registered office remains at Sunvic House, 10 Essex Street, Strand, London, W.C.2.

A NUMBER of appointments have been announced by the Vacuum Oil Co., Ltd. Mr. G. M. McGavin is to be chief engineer (marine) in succession to Eng. Cdr. H. J. Nicholson, R.N. (Retd.), who has retired. Mr. H. S. Yelland is to be manager of the London marine sales branch, and Mr. H. M. Currie manager of Newcastle marine sales branch.

MR. WILLIAM WHITE, manager of the dry docks department of R. & W. Hawthorn, Leslie & Co., Ltd., Hebburn, for 23 years, has retired. He is succeeded by Mr. Norman Boyd, previously assistant manager at Blyth Dry Docks & Shipbuilding Co., Ltd.

THE KEEL has recently been laid in the Szczecin shipyard of the first ship in a new series of coal and ore carriers. These will be of a new type, larger than has hitherto been produced in Poland.

* * * *

EXPORTS from the River Tees during August, amounting to 105,379 tons, were the lowest recorded since August 1949 and 28,000 tons less than the total for August last year. Shortage of raw materials, especially scrap, has led to a decrease in iron and steel exports, and this is stated to be the main reason for the decline. Imports, amounting to 356,963 tons, were the highest recorded since June 1950 and showed an increase of 55,526 tons compared with August 1950. The revenue from both ships and cargoes, at £26,318, was the second highest monthly figure recorded since November 1950, but £1,853 less than the receipts in August 1950.

DURING the month of September, foreign imports through the port of Bristol amounted to 244,684 tons, compared with 167,314 tons for September 1950. Foreign exports continued to be of negligible proportions, amounting only to 6,189 tons, but inward and outward coastal traffic, at 190,928 tons and 103,119 tons, showed a considerable improvement over the corresponding figures last year.

AT A reception at the Adelphi Hotel, Liverpool, last week, Mr. A. J. Ketcher, manager of the United States Lines' European central claims office, received a silver tea service from Mr. W. J. Weigele, assistant European general manager, to celebrate 50 years of service with the United States Lines and its associate company, the Atlantic Transport Co., Ltd.

MR. J. S. ROBINSON, formerly assistant secretary, has taken up the appointment as secretary of the Institute of Marine Engineers in succession to Mr. B. C. Curling, who has retired. Mr. Robinson was appointed assistant secretary of the Institute in 1948, previously having served on the editorial staff of the Institution of Mechanical Engineers.

MR. F. M. OWNER has joined the de Havilland Engine Co., Ltd., as deputy chief engineer. He has been engaged on engine design with the Bristol Aeroplane Co., Ltd., since 1922, and retired from that company in July this year, having been chief engineer (engines) since 1947.

THE America-West African Freight Conference has fixed a 30 per cent surcharge on shipments to the Belgian Congo ports of Boma and Matadi as from November 5, due to extreme delays encountered at these ports.

THE TANKER *Atlantic Duke* (16,500 tons d.w.), launched by Smith's Dock Co., Ltd., South Bank-on-Tees, for S.G. Livanos, is the largest vessel yet built by the company.

* * * *

DET Bergenske Dampskibsselskap and Det Nordenfjeldske D/S/S, Trondheim, are to resume their pre-war regular service between West and North Norway and Hamburg, with a sailing from Hamburg every Friday. Before the war there were three sailings a week. The steamers *Orm Jarl* and *Columba* will be used in the service with West Norway, and the motorship *Ottar Jarl* (which has holds suitable for carrying frozen fish) in the service to North Norway.

MR. P. D. P. KEMP, sales and contracts manager since 1949 of Saunders-Roe (Anglesey), Ltd., has been appointed a director of the company. The staff under Mr. Kemp has been reorganised, and Mr. A. Hayward has been appointed contracts officer and Mr. E. N. Corns, publicity officer.

AT THE 18th annual general meeting of the British Tugowners' Association, Mr. Fred. A. Thomas (Bristol Channel Towage Co., Ltd.), Cardiff, was elected chairman, and Mr. C. G. Alexander (W. H. J. Alexander, Ltd.), London, was elected vice-chairman.

A COLOUR film has been produced in Norway of the country's merchant seamen. Entitled "At Sea," the film was produced with the support of the Norwegian Shipowners' Association.

THE DEATH has occurred of Captain K. N. Mackenzie, marine superintendent at Holyhead for the past 15 years for the L.M.S. Railway, and later British Railways.

THE offices of Carras (U.S.A.), Ltd., have been removed to 21 West Street, New York 6. Telephone: Digby 4-3473.

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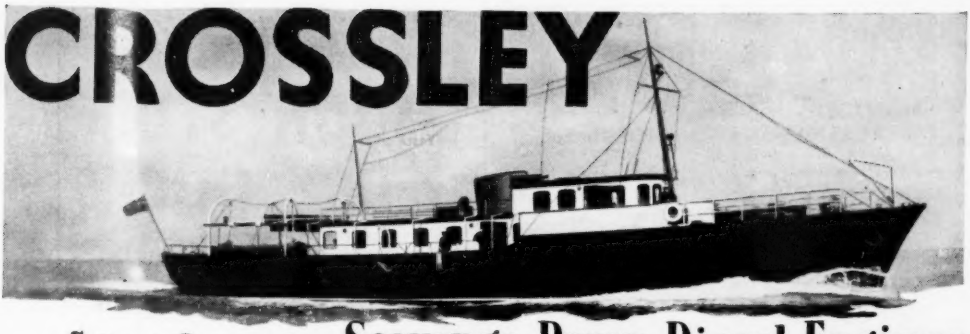

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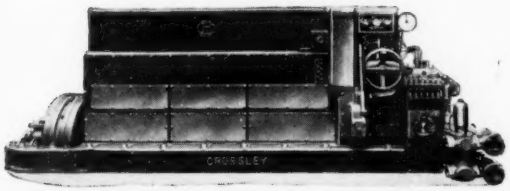

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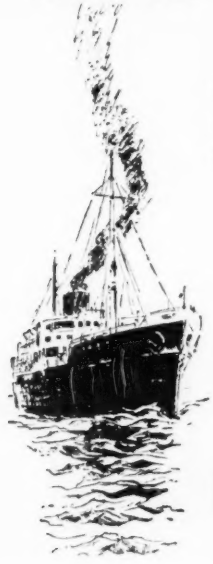

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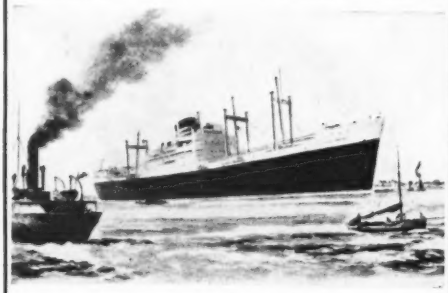

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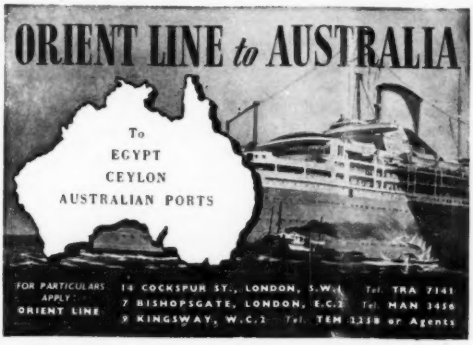

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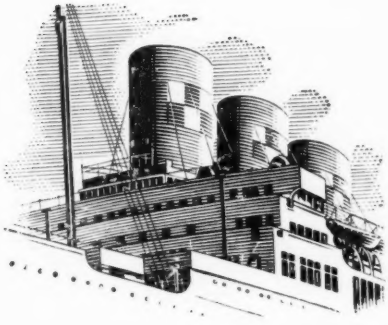

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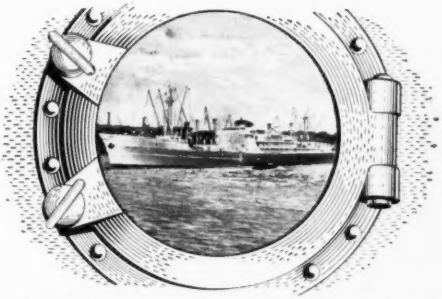

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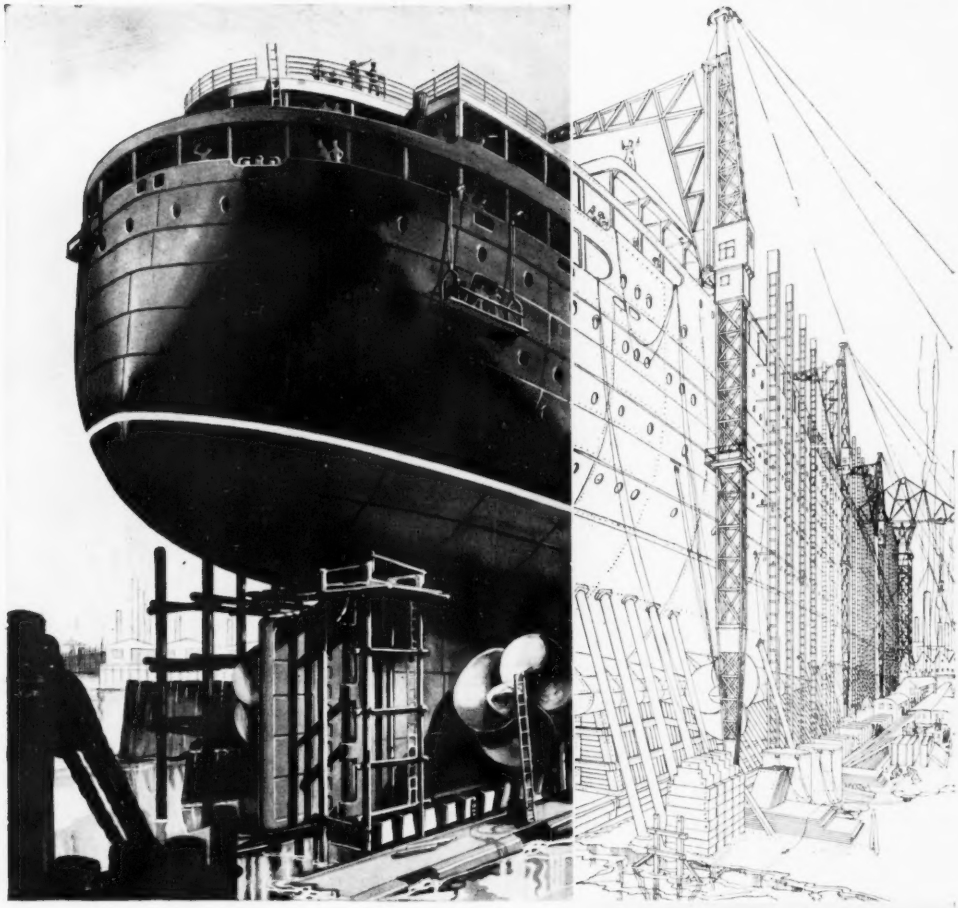

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